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Conference Proceedings

Aircraft Noise and the Community

University of California
Los Angeles, California

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William C. Meecham
Editor

Sponsored by the School of Engineering and Applied Science of the University of California, Los Angeles, California, in cooperation with the U.S. Environmental Protection Agency, Region IX. The opinions expressed herein are those of the authors and do not represent the policy of the U.S. Environmental Protection Agency.

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PROGRAM

Thursday, September 21

8:15-8:45 a.m.	Registration
8:45 a.m.	Opening Remarks / R.R. O'Neill, Dean, School of Engineering and Applied Science, UCLA
9:00 a.m.	Aircraft Noise -- The FAA Role in Working with the Community and Aviation Industry / Leon C. Daugherty
9:45 a.m.	Effects of Aircraft Noise on Health, Including Mental Hospital Admissions and Mortality Rates / William C. Meecham
10:45 a.m.	Is There Evidence for an Effect of Noise on the Fetal Life? / F. Nowell Jones
11:30 a.m.	Lunch Break
1:00 p.m.	To be announced / Walter Gillfillan
1:45 p.m.	Can General Aviation Survive in Today's Environment? / W. J. Critchfield
2:30 p.m.	Coffee Break
2:45 p.m.	A Manufacturer's View of Airport Community Noise / A. L. McPike
3:30 p.m.	Speakers will accept questions; general discussion

PREFACE

This is a (largely) transcribed record of a two-day conference on Aircraft Noise held at UCLA, September 21-22, 1978. There had been an FAA meeting in Los Angeles on a somewhat similar topic on May 10-11, 1976; but it was primarily intended for industry and agency people. The present conference was intended to be evenly balanced between industry/agency people on the one hand and public interest/citizen groups on the other. I have attempted to preserve the informal give-and-take format in these proceedings. The result is not perfectly edited, but hopefully the product is livelier as a result. Unfortunately many questioners during discussions did not identify themselves. And finally I apologize for the time it has taken to produce these Proceedings; it is very difficult to find funding for jet noise-health effects work.

I wish to thank particularly: Dr. Tom Mincer and his office of UCLA for their expert work on the meeting arrangements; Ms. Bev Greanya and Louise Hill of the EPA Region IX Word Processing Center for their Herculean efforts on transcription and Ms. Carolyn Peterson, Inglewood, California, for her (volunteer) efforts on editing.

W. C. Meecham
Editor and Chairman
May 1979

Aircraft Noise and the Community
Thursday, September 21, 1978

Dean Russell R. O'Neill of the School of Engineering and Applied Science, Opening Remarks:

It's my pleasure to welcome you to this conference. Conferences which bring the community to campus are an integral part of our academic plan in the School of Engineering. I'm partiularly pleased to welcome you to this conference because so many people have the mistaken idea that technology is uncaring and unfeeling, just an application of science to industrial or commercial objectives. I don't think that's true. I think that good technology, and that's the kind of technology I hope that we're talking about in the School of Engineering at UCLA, is very careful and very considerate of people, because engineering itself as a profession is people-oriented. You can't practice engineering all by yourself out on a desert island.

The ultimate purpose of engineering is the benefit of the people. But engineering also respects and reflects the values of these people. And it turns out that one of our values, apparently, is mobility. Most of us do want to move around a great deal, including flying. There are some side effects of that, and this conference, then, will provide an opportunity for you to examine the side effects and consequences.

Bill Meecham has assembled what seems to me to be a very impressive group of experts covering a very wide range of technical subjects, and I think you're in for a very interesting two-day period. While you're here, I hope you'll also take a moment to enjoy this beautiful weather that we've put on for you and our campus.

You might be interested to know that classes will begin next Monday. We're just getting ready, gearing up. We expect that when all the noses are counted we'll have something like 30,000 students on this campus this quarter--we're on the quarter system. About 27,000 of them will be on the general campus, and another 3,000 south of here in the Health Sciences. Of that 27,000 on the general campus, a little less than 10%, or about 2500 of them, will be in the School of Engineering, covering a wide range of topics including some courses that Bill will be teaching this fall. So I do hope you look around, as well as participate in this conference. And it is with a great deal of pleasure that I welcome you here.

Our quality of life and our economic well-being today are dependent upon the air transportation system. But this does not mean that those of us in aviation can ignore the environmental impact of this system on our citizens.

To me, quality of life must include both my environment and my economic security. I want the best possible environment in terms of clean air, clean water, quiet surroundings, green trees, and all the rest of the things that go to make up the environment. However, I also want economic security based on a challenging job and a good salary check. An absolutely perfect environment would not provide me with the quality of life I want, if it meant there were no jobs and I did not have the salary check which makes it possible for met to enjoy that environment. I believe there must be a balance between environment, economics, and many other factors which all go together to make up quality of life for our citizens.

In the 200 years since the founding of this country, we have risen to world leadership with a correspondingly high standard of living for our people. But in our concentration on ways and means to get poeple and goods from where they are to where they need to be, we have paid too little attention...until recently...to the adverse environmental effects of our progress in getting there first with the most.

A good example of how the problem of engine noise has been consistently underrated in aviation in the past is exemplified by the action taken by the FAA's predecessor, the Civil Aero-Nautics Administration in 1956. At that time, travel by airline jet was less than two years away. To prepare for the event, the CAA compiled a list of "100 jet age problems." But ironicially, the problem of jet noise was not addressed until you got to items 96 and 97 on the list. It almost didn't even make the list. Today...if we were redoing the list...we would give noise a very prominent place, probably one of the top, if not he very top problem in air transportation.

But, on reflection...I am not sure whether the jet age planners really underestimated the engine noise problem or overestimated public acceptance of that phenomenon. Maybe there were encouraged by the success of the Air Force in selling jet noise as the "sound of freedom" in those early days.

In any event, the public's mood changed and protection over jet noise continued to increase as the volume of jet operations rose and the people pushed out from the central cities into the airport environs. Moreover, the concern over noise has

In comparison to the vast national acreage required by our highway and railway systems, the land needed by our airport system is minimal. But this comparison is somewhat misleading because it only includes the acreage used for actual aircraft operation. It does not include the land or people impacted by aircraft noise. These figures are something else. For example by our estimates there are over six million people and 900,000 acres of land that are impacted by aircraft noise to a significant level.

Over 300 million dollars have already been expended by airport proprietors to acquire noise impacted land around airports, and several of the major airports in the nation have potential lawsuits of additional hundreds of millions of dollars pending against them.

Citizen opposition to aircraft noise has delayed, and in some cases, has prevented airport development and expansion and the installation of facilities to improve safety and airport capacity.

Airport operators, in some instances, have taken action to severely restrict airport use in order to provide noise relief. There is considerable concern that if such restrictions proliferate among the nation's major airports, our air transportation system may no longer be viable. The destruction of the nation's air transportation system, in my judgement, would be disastrous for the well-being of the nation.

We allowed the railway system of this country to be destroyed, therefore, it is no longer the answer to long distance high-speed travel. Whether we like aviation or not, we are stuck with it. It is the only reasonable answer to high-speed long distance travel if we are to keep this country strong.

As you can readily see, we have many problems.

Several proposed solutions to the airside problem have been suggested, but the cost of most of them have set up a howl of protest throughout the aviation industry. These include some 60 billion dollars to replace the 1600 noisy aircraft in the commercial aircraft fleet or 4 to 6 billion dollars to just re-engine those aircraft and 10 to 12 billion dollars for real estate acquisition.

I will not go into details of the various proposals because of their complexity. But in my view, I think retrofitting older airline aircraft which do not meet FAR Part 36 standards with

Airport operators have the authority to propose preferential runways, arrival and departure routes, acquire land for environmental purposes, control engine run-ups and other ground operations, and to work with the FAA, pilots and airlines to abate noise.

Local units of government have a key role. They can and must adopt land use controls in noise impacted areas to prevent residential encroachment near airports. They can also receive federal assistance to buy land in certain noise impacted areas, can require soundproofing insulation in building construction and, most important, can get the local people involved.

Talking about community involvement in aviation noise reduction, I would like to present you with a problem that we are facing on a daily basis. I would like to ask you advice and counsel on what is the best federal policy to follow in the public interest.

We are continually asked by one group to citizens to reduce or remove the aircraft noise over their homes or community trough a change of air traffic procedures. When we do this, invariabily we remove the noise from that community, but put it over another community. The science of air traffic contro, which is a very technical one, is also one in which reasonable flexibility is possible. After aviation safety factors are considered first, we can, through altering the air traffic control procedures, remove or greatly reduce the noise over one community, but in most likelihood, we will move it over someone else.

Now, the question I am asking you is: "Who should make that judgement?" The airpot operator? The FAA? The Federal Government? or should it be turned over to local government so, through their elected representatives, the people can agree on some fair way to share the noise?

I believe that the citizens that are impacted by aviation noise must find a way to agree as to how the noise should be distributed. That is real citizen involvement. During the course of this conference, I would appreciate hearing your views on this subject of environmental importance.

This and other environmental issues and difficulties facing the transportation industry are significant, but are by no means unsolvable. The problem is not getting engineers interested in social problems, but contrary to this, I believe the issue is getting social scientists to use technology to solve social problems. Nevertheless, the increasing clamor for acceptable solutions to environmental problems plaguing the transportation industry cannot be dismissed because of the national dependence on transportation.

You know it is human nature to indulge in the contradiction that consists of claiming the advantages of a system, while refusing its inconveniences. The same community that complains of industrial noise is highly pleased to accept the taxes, employment, and other benefits accruing from its airport and associated activities.

Airports work like magnets. An airport comes in and, because of the airport, people move in, shopping centers come in, people want to take advantage of the high property values in the airport areas and all the other advantages. Schools are built and then children can't learn because of the noise. We completely contradict ourselves in society. But, difficult as it is, we must work toward appropriate social solutions.

All it would take would be for one of our magnificent transportation facilities, freeways or airports, to suddenly vanish and everyone would perceive their incalculable social, cultural and economic advantages. This, of course, does not cause any of the nation's concern for the environmental sins committed by our transportation industry to be less real. Our response to these concerns must be certain, positive, and as fast as possible.

You probably all heard the story about the categorization of people within any organization or on any issue. You know about 80% of the population doesn't know what's going on and worse yet, they don't care. About 15% of the poeple watch things happen, the over 5 % of the people make things happen. I carry this one step further: Of the 5% that make things happen, I believe they are pretty well evely divided most of the time, with about two and a half percent of the people constructively making things happen, and two and a half percent are destructively making things happen. We have made progress because we have been over-balanced all the way along on constructively making things happen, but it is a very small portion of the population that are those that make things happen. I feel that he group here this morning is that group which will constructively make things happen.

In closing, I would like to quote a statement that was made by Mary M. Anderson, our Associate Administrator for Policy and International Aviation Affairs, Washington, D.C. FAA. She made this statement at the aviation noise symposium held here in Los Angeles in may of this year. She closed her remarks with the statement, "The FAA can help you solve your noise problem, within the context of a viable and safe air transportation system, but our role is exactly that--one of support and help. The lead and initiative must come from the local level."

Now, to conclude, I pledge to you as the Acting Director of the Federal Aviation Administration Western Region, that this Region, working with citizen groups, airport operators, aircraft operators, will take as many initiatives as possible that are economically sound, technologically feasible, and practical within safety to reduce aviation noise.

I believe there are answers to our problems, if we will work together looking towards a solution.

W. C. Meecham: There is time for a few questions after each talk; at the end of the day there may be more extensive discussion of
each topic.

Christine Reed, City Council Member, City of Santa Monica: I have the feeling that air quality regulations will come down faster than noise regulations, and also the airport engine modifications and new engine standards to meet air quality regulations that are being talked about. I'm wondering if those'll have an adverse or positive impact on noise.

LCD: I see it as positive impact, and I base that on the new engines which are going on the aircraft today. Noise is only one factor in those engines. They are more fuel-efficient. They develop far less pollution. I see the two things working together, and I would hope that neither one works to the detriment of the other. And I will have to keep an eye on that. I don't know of anything today that's not causing both to go forth together.

Jim Hoyt: I'm with the Santa Monica Airport Commission, and President of the Sunset Dark Prop Unit Association, which is an association near the airport. My concern with the FAA is basically that we have attempted to do some of the things you have suggested, and find ourselves in Federal Court, with the FAA saying that what we're doing is illegal.

Let me just ask a question that I, as a layman, have difficulty understanding. From what I read of the Concord case in New York, FAA's position basically was that it could not ban the Concord because the Concord meets the standards that were established by the Port of authority for aircraft noise. Yet in the Santa Monica case, as I understand the FAA position, that Santa Monica cannot ban aircraft because Santa Monica cannot measure noise. I find the two to be in conflict. If the City of New York has to let planes in because they meet their standards, why can the City of Santa Monica not establish standards? Thank you.

LCD: As I understand the Santa Monica case, and I can't get into that in too much detail because it is in litigation, our position in Santa Monica is that the proposed regulation is discriminatory because it bans jets across the board, where some jets are quieter than piston aircraft which are allowed to go in.

U.S.*: That is only the first statement. The second statement is that the City cannot measure noise. And secondly, the FAA position is that the City should not even test jets to see whether or not they meet the noise level because it's a noise level. That's the thing.

LCD: I'm not that familiar with the details. And as I say, that's one that's in litigation, and it's difficult to openly discuss that here because of that. But I will pledge to you as a community that we will work with you in trying to develop a usable, satisfactory way of operating your airport without getting into Court and arguing over it. There may be times when we have to, but I would prefer that we work with you in developing ordinances, rather than arguing over it in Court. That gets another party involved--well, I don't want to be critical of our Court system, but I'm not sure that they are the place to settle technical problems. When it comes down to the final social issue, yes, the Court is the case to solve it.

I. Stern: *'m here on behalf of a federation composed of many homeowners association north of the airport. And first I would like to ask you, since you asked our advice as to how things could be helped, and how the FAA could cooperate with us, whether you'll be here tomorrow when the citizens will give their views?

LCD: I will. I could not come to this meeting without spending the entire two days at it.

I. S.: That's good. I want to congratulate you on your appointment, and I want to say that in our case, it is not a matter of moving noise from one community to the other. We are along the Coast, and the noise of the aircraft can go over the ocean. And you know which route we are speaking about because we have corresponded. So we are not trying to move aircraft noise from one community to the other, and tomorrow I'll address myself exactly to the issue.

Actually, as we see it, to solve your problem moves noise over another community. But we are taking another look at possible solutions to that at the present. But I am interested in your presentation tomorrow. Thank you.

*U.S. = Unidentified Speaker

Hank Smith, Monterey: I'd like to get your opinion regarding a proposal that we're in the process of discussing, and that involves a users fee based upon noise emittance by aircraft, utilizing the figures the FAA has published regarding each aircraft. Our rationale behind this is at this point that we charge, or are in the process of charging, a landing fee based upon weight because of the damage that accrues to a runway, and we feel that there's also an impact--a damage impact--to the community with regard to noise. And we feel that it would be fair to assess a users fee in that regard. And we'd like to know what your opinion would be toward that kind of an effort.

LCD: That one is one that I can't give you an answer on today because there are a lot of people looking at that, and I'm sorry, but off the cuff it looks, you know, like the same thing as weight. But when we get into the legal ramifications, the impact, that's one that's going to take some study. You are not the only community that is proposing such. But I will commit that our legal staff and our air traffic people will work with you on that proposal, and work with you to come up with something that will help-solve the problem. But as far as a yes or no answer, that's one that gets pretty deeply involved as to whether it is an acceptable means or not. It certainly is an avenue that is open for discussion.

Joe P. Archuci: I come from Torrance. I also happen to be Chairman of Torrance's Citizen's Advisory Committee on Airport Noise, a body which was recently established by the City Council. And since I live under the umbrella of the general aviation airport, I'm kind of surprised when I read any literature on airport noise, the FAA Orders and Circulars, all kinds of regulations in the Congress addressing the question of noise. They're talking only in terms of jets. Now, I suppose it is no secret that the noise impact is a function of noise volume, and the frequency of occurrence. Now, our airport, everybody admits, it's tenth busiest airport in the country. Therefore, even though the amplitude of individual noise...could be lower than the jets, but the frequency of occurrence above the buildings makes you keep awake. Now, what disappoints me is that, in all kinds of cases, that the people, whether State or Federal people, the EPA, they worry about the problem of jet noise. And we agree that, because it dominates it's stronger, and the people are more affected by that. But there are many more general aviation try to ignore. And I think it's time to address the problem of noise generated by jets or non-jets. It's immaterial, to be impartial. Thank you.

LCD: I appreciate your comments, and I think Torrance and your group there is in the forefront today of looking for solutions to general aviation noise. And we are not ignoring it. It is a lower priority than the jet noise, but I personally use Torrance Airport. I also go to church in a church that sits right under the flights. And Sunday mornings, I appreciate what you're talking about. But I look at Torrance as a community that is working together today, and I think will come up with some solutions. We've got some pilots down at Torrance. We filed some violations against a couple, a couple of weeks ago, that were violating your night departure rules, not because they violated your ordinance, but because they took off without lights so that you wouldn't see them. Now, that's a safety problem, and that's where we got on top of 'em. If they turned their lights on, then you could get them for your ordinance. But when they take off without lights into the air space, that becomes a real major concern where it's not only noise, it's safety as well. But we are working with Torrance and with others on the general aviation problem.

Ben Warren, with the City of Long Beach: The gentleman inquired about noise-related landing fees. I wonder if you could tell us whether they're still experimenting on working with it in Boston, and has it been successful at all?

LCD: I'm not sure of the present situation in Boston. I know that they have run the test on the towing of aircraft, and that did not prove to be successful in accomplishing their purposes. But I don't know what's happened or whether they are using or not the landing fee based on noise. I'll try and find out and get word to you.

BW: Okay. I also wonder if you could speculate on the liklihood that we will have some Federal legislation on the user tax and the ADAP bill come out and be signed.

LCD: A user tax on noise?

BW: Yes, for replacing aircraft.

LCD: I don't see it in what's being proposed today in the new ADAP bill. You know, there is a new--ADAP runs out in another year, and the FAA, Congress, Department of Transportation, airport operators, and many others are working together today to develop the new ADAP bill, and the most recent I've had on it is that there would not be a great deal of change from the present bill.

BW: I was referring also--you mentioned the House passed a bill. Aren't they just about to adjourn--Isn't Congress just about to adjourn? Are we going to get any Bill?

LCD: I don't see anything in this Congress. The ADAP bill is next Congress, and it would be tied in with that, I'm sure. I don't think there's anything in either House today. There are some things in Committee, but nothing out of Committee, which it would have to be to be out before the election.

Nick Ford, also from Monterey, but I'm in the airport management side: One question I'd like to ask you, and that's the role of the FAA--at least the Regional role--in what relationship is played between airport management and tower personnel in trying to effect local noise abatement procedures. And I'm not saying we do not have full cooperation at our airport, but there seems to be a line of demarcation that's hard to cross. Do you do this at local level? Do you go at higher level, and who controls what?

LCD: Okay, that's a good question, Nick, and I appreciate your asking it. I have, since I came into the Region, reinforced an instruction to our Facility Chiefs, Tower Chiefs, and Flight Service Station Chiefs, which are the people that are available most readily to a local community, and advised those people that their responsibility is to provide as much technical advice, counsel, and help as they possibly can in developing noise plans. Now, when it comes down to the actual approval of a noise plan, the Facility Chief does not have that authority. That must come into the Regional Office and receive review. However, in most cases, and hopefully in the future in all cases, wherever a Facility Chief is working with the local community or expert operator in developing a noise plan, he will also be keeping those of us in the Regional Office advised as to what's being proposed. And we will be reviewing it as it's going on so that we don't come up - that you and the Tower Chief have worked out what looks to be a real good plan, and somebody in the Regional Office or Washington says no. That's no good. That is not what I consider working together. But your point of contact is the Tower Chief, and I re-emphasize about once a month on a ... that we have with all of our Facility Chiefs that they have this responsibility to work with the community to provide the advice, counsel, and help on developing noise plans.

Louis Leader, Monterey Peninsula Herald: The Airport Board in Monterey recently took action to look into the possibility of instituting a complete curfew for general aviation between 11 p.m. and 7 a.m., and apparently will contact the FAA on this. What are the chances of FAA approval? Is such approval needed? And what is your general feeling about a complete curfew of that type?

LCD: We oppose curfews if they impact ..., or are discriminatory. If you impose a curfew on all jets, that becomes discriminatory because there are jets that are quieter than some piston aircraft. A general aviation airport that was not a reliever or an interstate air carrier airport, or did not have interstate activity, we probably could not oppose a curfew as such. Each individual situation is different, and it has to be looked at and reviewed based on that community's needs, desires, and that particular airport and how it fits into the total system. George Heap, you started to get up for a question.

George Heap: Yes, I did. Assuming that HRH729 will become a law in short order, which we all hope it will because I think it's a big step in the right direction--incidentally, I want to clarify the air as to why I'm here; first off--I live in East Westchester almost under the north runway, and we've listened to the jets for several years now. It isn't quite musical, but that's the way it is. Well, I'm also the government Liaison Chairman of the Greater Westchester Homeowners Association, and numerous others are trying to bring about a solution to the problems. And there are many--not only noise, but pollution. My question, though--that's what the period is for--is: Assuming that this 729 becomes a law, what part will the FAA play, and do they have a schedule for implementation? And what are the mechanics of putting it into effect? And, last but not least, can you give us an estimate on how long it's gonna take? You know, we've been workin' on this twenty years, so if we could do it in a couple of months we'd appreciate it. Thank you.

LCD: Well, as far as the mechanics, our Washington Office is developing those; that would be a Washington policy. And I am confident that the day the President signs that bill, and I'm confident as you are that the bill will come out of Congress and be signed, that the mechanics, the processes and such, will be set up. Now, I'm assuming from what I've read of the bill, if this tax lasts for five years, that Congress is saying they want this done within five years, and of course the deadlines on 536 were not changed as--well, that's still in the Conference Committee, because Senator Cannon wanted the deadlines moved off, but your Congressman Anderson said no, those deadlines stay. And I think that's in this bill as it was passed. I have not seen it as it was actually passed, but it's my understanding that those dates are still firm.

W.C.: I think there is time for one more question--

Richard Fall of the Sunset Park Association at Santa Monica: I would like to know if the FAA bases their evaluations on noise. You said several times, sir, that there are certain jets that make less noise than certain prop planes. Does the FAA assume that these levels of noise are of an equal quality? I lived for twelve years under jets, and I can tell you that whether they're loud or not loud is a quality that's inaudible, that rattles your teeth, and creates heart disease, okay? Is the FAA measuring that kind of noise?

LCD: We are trying. At the present time, the levels that are specified in Part 36 are noise measurements. They don't take into impact the psychological effects. I agree with you. Not psychological, it's physiological.

R.F.: Yes. Then the--to me, the worst noise is a helicopter, because of that pounding from the blades. There are others--I used to live in Oklahoma City, just off the Bethany Plant or North-American Rockwell, where they were building the Aerocommander. And the engine and prop they used to use on that aircraft, to me, was the worst noise, far worse, than a 727. So there are psychological, physical, and other effects that have got to be included in this as we move forward. At the present day, though, there is not a measurement, because that's different for each of us as individuals. And how we find it--but I agree that there must be some involvement in that part of it.

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But the FAA is doing nothing, though, at this time?

LCD: We are, through our Civil Aero-Medical Institute in Oklahoma City, as well as our research and development people, our own environmental quality group in Washington, looking at ways, or looking at various studies, other measurements. We don't have an answer; but yes, we are looking at it.

W. C. Meecham: Thank you.

Effects of Aircraft Noise on Health, Including Mental Hospital Admissions and Mortality Rates

W. C. Meecham, Professor, UCLA

We have an informal conference here, so I'll introduce myself. I am trained as a physicist. I teach in the School of Engineering and Applied Science, primarily Acoustics and Aeronautical Engineering. In the main, I shall speak primarily of jet noise. The conference of course deals with all kinds of aircraft noise, general aviation, helicopter noise, any aircraft noise falls within the realm of our discussion.

Until a few years ago, virtually the only human, acoustic damage which was investigated (which was even believed in as possible) was damage to hearing due to excessive noise.

I think that we have seen, within the past few years, an increase in attention to the other damages which many of us, now believe occur because of this tremendous noise exposure.

I should say in advance that the question of safety should not be exclusively related to those of us (most of us) who fly. That's certainly of concern when you're in a plane. But the serious question for any well-run society should be raised: Is it also safe for people on the ground? We propose that at present it's not. Now, let's speak of the studies of physical and psychological damage from jet aircraft. There have been a number of them, though not nearly as many as we feel should be carried out. Partly, I'm making a plea for various government agencies, the FAA, for example, to support--not just our studies--to support other studies. The FAA has a budget over a billion dollars. It is capable of funding studies in these areas. Now it certainly funds other studies extensively.

The first examination of psychological damage caused by jet aircraft was carried out by Herridge and others in England. They examined areas near Heathrow Airport outside London, one of the major European airports. They carried out this study by a correlation process. The procedure is to choose a test or target area, underneath the jet aircraft, in a region of very high aircraft noise. Then choose a control area removed from the airport. On examining any possible effects of jet aircraft, it's important to choose the two areas as nearly alike as possible in important characteristics, other than noise. This they tried to do. They found a statistically significant, over 30% increase in mental hospital admissions (commonly, nervous breakdowns) in their high noise area where every aircraft flying over made noise in excess of 90 decibels.

The decibel scale is logarithmic. Every ten decibels means that there has been a factor of ten increase in the amount of noise energy. Thus, if we're talking of 20 decibels, we're talking of an increase of a factor of 100 in noise energy. How should we relate the noise energy which we can measure to its effects upon human beings. A 90 decibel level is 40-50 decibels above ordinary noise as we find it around a city. This much noise is 10,000-100,000, in energy, times the noise one would experience in an ordinary neighborhood.

Let me emphasize early that as a matter of common sense, any person who goes, say, over to Los Angeles Airport and stands under the incoming flights for an hour appreciates that people residing there are in a living hell. This is simply a disastrous place to live, all measurements aside. It's our task to try to document the effects of that kind of noise.

Returning again to the study which was carried out in England, there was, as I say, an over 30% increase in nervous breakdowns across the board, in this area. Continuing the study, they broke down the various categories of nervous breakdowns. And as it happened, the most striking, the most significant increase was that caused by brain tumors. And that increase amounted to over 110%. How that noise exposure affects the occurrence of brain tumors is an open question. From their one study--it did.

The response to this study was uniformly negative from the British government agencies and the British aircraft industry. The objections were many. One of the least creditable was that the outstanding effect was only on women (there is something almost sexist in that kind of response). The real reason that it was primarily women was because, of course, they were more exposed to the noise, not, as the context implied, because women are "excitable". Secondly, the results were more pronounced on older women, and even this was said. In context the remarks denigrated a "few-old women".

A second study was initiated (substantially) through a government agency. That second study, done about two years later, was on essentially the same district for the same period of time with the stated result that the earlier study lacked statistical significance. I would quarrel with their conclusion. As a matter of fact, in all twelve categories of people involved in the second study, they did find an increase in this kind of disease for the high noise jet aircraft area--an increase in every one of the twelve. Each such increase individually, however, was by the usual statistical measure, not significant (sometimes not quite significant). The odds that in all twelve categories--and I'm not selecting them, these were the only ones they reported--in all twelve categories, that the disease would be increased by chance within the noise area are 4,000 to 1. The odds are overwhelming that the authors had an effect which they should have examined. My feeling is that this second study, if it had included, say, two more years would have had positive, significant results for the high noise area. They had not quite enough data.

Here at UCLA, we studied the noise exposure in schools near Los Angeles Airport, under the landing pattern. We examined fifteen schools to see what the noise levels were. We found in these fifteen schools that, in the schoolyards, the noise levels ranged from 90 decibels to 117 decibels for various fly-overs; (117 decibels is indescribable). This went on all day long during school, (a somewhat abbreviated number of hours here in Los Angeles these days). Furthermore, sadly the children lived in the same neighborhood, so once they got out of school they got the rest of the noise in their homes.

Now, what affect did all of that have? Well, we have no quantitative measurement. Common sense suggests that it is certain to be harmful. The nurses in those schools reported that children had damaged hearing. Further, two of the principals reported that they had incidence of nervous breakdown in the classroom.

After this school study we started our own study of mental hospital admissions around Los Angeles International Airport, patterned after what was done in England. We chose the same noise contour, 90 decibels. And I should say, to give you some feeling for that noise, it's a noise which a large tractor-trailer truck makes at top speed, passing you within a dozen feet. I emphasize that every plane flying-over made more noise than that, often the equivalent of ten or one hundred such trucks passing simultaneously.

Let me describe the airport briefly. Los Angeles Airport has two runway complexes, south and north. Each one of those complexes has two runways. You can often see landing planes which appear to be side by side on one or the other of these pair. We were under the south runway complex. The area we chose was in the cities of Lennox and Inglewood. It was about four miles long, two miles wide, and contained over 80,000 people. (If we took the 70decibel contour, thousands more people would have been included). The north runway complex has approximately the same number of people in these contours, though we didn't test there. We chose a control area in the city of Gardena containing about the same number of people. Using census information from 1970, the areas were adjusted to be as much alike as we could make them in income, value of homes, racial composition, and age.

We found that there was about a 30% increase in nervous breakdowns in the high noise jet aircraft area. Our results were just short of statistical significance: we had only eight months of hospital admissions to deal with. (The question of statistics, I realize, is not familiar to everybody, but the more information you have, the surer you become of your results). The admissions information was extracted by a psychiatrist who was in the South Bay Medical Center--I think he would rather not be named. We did not have sufficient statistical information to break down into different kinds of hospital admissions, as they had done in England, so we can say nothing on that question.

There is a tendency, I'll point out later, for government agencies to become very reticent as soon as they discover that this kind of study is being carried out. It became very difficult to get admissions data over in this area after it was known that we were doing this study. We found encouraging the fact that we obtained the same percentage as had been found earlier in England.

I should say that on our nervous breakdown study one of the objections was that the Black population was greater in the target area than it was in the control: we had about 20% Black population in the target area, and about 10% in the control area. However, in order to account for the 30% breakdown increase, and to account for that by race alone, we would have to greatly increase incidence of nervous breakdowns among Blacks, known not to be true.

With this background, Neil Shaw and I felt that it was likely that there would be an effect on mortality rates, and so undertook a study about two years ago to examine that question. We chose the same target area in Lennox and Inglewood. We expanded the control area to try to get a better balance on race and other characteristics. But roughly the same areas are being examined. The Black population was the same in the two areas to within 1-2%.

We get the information on the popultation in either one of these areas from the 1970 census tapes. (The census tapes are computer tapes which are generated by the Federal government; the most recent census was in 1970.) On those tapes are recorded information concerning income, racial composition, age, and so on. We adjust our control area by choosing census tracts and adding them in or subtracting them until the computed results tell us that we have a central area composition like that of the target area.

To go on, the Chicano population, another issue that is often raised, was within 6% of being the same in these two areas. The average and median ages in the two areas were within a year of one another. The incomes were the same within about 5% in the two areas. There are, of course, always differences in this kind of study. You can't find areas which are identical to one another. But what we must do in any correlation study is to try to eliminate differences in any of the important factors which we can identify.

I remind you of an earlier outstanding correlation study which we have had in the United States, carried out over a decade ago, which finally showed that there was a serious connection between smoking and lung cancer. And that was later expanded to high blood pressure and heart disease, as various connections were shown. I remind you that people chiefly hired by the tobacco industry disputed those correlation studies for years; many would still dispute them. So, it is true that one can go on disputing a correlation study almost endlessly. On the other hand, it's the only way we have of determining these damages. We obviously cannot take human beings and expose them. We must deal with existing situations.

From the described study we found an overall 20% increase in mortality rates in the test area as compared with the control area. There are some minor differences in age distribution in the two areas, and we're continuing trying to balance up our control areas to remove those differences.

I propose to proceed by taking the conservative view that this 20% was not caused by the major difference between the two, the intense noise, but was caused by the minor age variation and other variations which, of course, existed between the two areas. If we accept that 20% increase, then we can proceed: if we look to a particular cause of death, and find but a 20% increase in that cause in the high noise radiated area, we'll ignore it. If the increase goes above 20%, we will then start to examine it statistically, and use the 20% as a base. One of the things which we discovered, which we have yet to understand, was the remarkable fact that one third of the deaths in both of these areas were not reported at all. How do we know that? We know the mortality rate in Los Angeles County; its been calculated by others using the same mortality tapes. That mortality rate is essentially the same throughout the United States. Here we have two areas, embracing 150,000 people and more, certainly large enough to get good statistics, where one third of the deaths are not being reported.

We can guess at some causes. The people are very poor in both of these districts. Suppose there is an older person living at home, and that person is taken to the County Hospital (about the only hospital which they can afford to use) and the person dies. Immediately the family is faced with the prospect that they're going to have gigantic medical bills. So if they can give a bad address, my suspicion is they'll certainly do it.

These people have had a lot of experience with County help, and they may or may not get such help, as they know. I'd say there is still a tendency to try to avoid these bills if they can.

Another possibility, which I consider, frankly, more likely is that somehow in the statistical gathering of the information, they've been lost. That didn't occur in general in Los Angeles. As I say, the same tapes were used throughout the County and they get the right number. It's only in these poor areas that the right numbers of deaths were not found. A one third loss is hundreds of people a year. Consider the recording process. A death certificate is written with the home address of the person. They write also where the death occurred, probably in one of the County Hospitals, and various other pieces of information--age, of course, etc. Then that's turned in to the LA County Health Services Department. It's transcribed from the death certificate and put onto a computer tape. My guess is that that's one likely place where the trouble has occurred. I might say in passing that the Health Department up to now has refused to give us any more information in useful form or to let us use any more information, thus it is difficult for us to examine these errors.

Now comes the question, is there a geographical bias in the loss of deaths? If 20% more loss occurs in the airport area than in those other areas, we're going to have a very hard time dealing with the statistics. Our suspicion is that somehow there is an extra geographical bias as well.

What about breakdown according to causes of death? There was a 20% increase in deaths due to stroke under the conservative criterion I'm using here. That amounts to between 30 and 40 more people having died in this area than would have died if they didn't live near that airport during two years. Stroke, of course, is known to be, in part a stress-related disease. It is our belief that the extra stress of living in this circumstance has caused an increase in deaths among people. They had vascular problems earlier, but would have lived considerably longer if they hadn't been under that stress.

We found that the most striking statistical result was a 120% increase in deaths due to sclerosis of the liver, usually credited to alcoholism. Alcoholism is clearly a stress-related disease. The number of other drug-related deaths, is not large enough so that we could have statistically significant resultsthough they increased near the airport.

Let's talk about statistical significance. The question always is this: Could you have the results that you see by chance? To be significant, you need odds against the event's having occurring by chance; the usual measure is 20 to 1. If the odds are bigger than 20 to 1 against the result's occurring by chance, than it is said to be, by this arbitrary criterion, statistically significant.

It is embarassing to announce such results in front of the people who live in these areas. Any one of them will say to you, "Why are you coming in with your computers, your sound level meters, all of the paraphernalia, to tell us this is a terrible place to live? We know that very well."

I submit that more people may be killed by the noise than are killed in air accidents at Los Angeles Airport. Los Angeles Airport is, again a safe airport. The FAA is certainly to be complimented, and the pilots likewise. But in a two year period dozens of people, we feel may have been killed by the noise, judged by mortality rates.

We characterize our study as an indication of a problem--we think a strong indication--of a very serious problem under the landing patterns. We feel now that the burden of proof is on the other side. We feel that the FAA and the commercial jet carriers, and of course the manufacturers, should undertake to show that they're not causing damage. I wish to emphasize that this kind of study is in essence statistical. We look for statistical correlations of deaths for various high noise areas. The cause of death has already been assigned by physicians much earlier. (There are medical questions involved in the precise ways high noise affects tension related diseases, but that is not our province). The use of probability and statistics is at the heart of such work. We're simply dealing with numbers off computer tapes.

There appears to be a serious problem not just here at Los Angeles Airport but at every major jet airport--at O'Hare, at Kennedy, at Logan, at National Airport in Washington--all of those and many others have large residential areas exposed to jet noise. However, I might say that Los Angeles is unusual, the leader of the nation in this characteristic. It has the largest citizen exposure, I believe, of any airport in the world. The landing patterns occur almost always in one direction, from the land side. The patterns lie entirely, for 15 miles, over large residential areas (financially poorer areas) where there is dense population.

To improve the situation we propose changing the flight patterns, which could be done within a year. We propose to bring the planes in, and take off over the ocean. This over-ocean approach process has been used for several years, at night--for six and a half hours. The pilots have objected and have chosen to give Los Angeles Airport, because of this nightime procedure, a "black star". I propose that this is complete nonsense. Anyone who has flown knows that this is an easy airport--no winds, no impediments, nothing in the way. Consider O'Hare in the middle of winter. There may be a partially icy runway, you've got cross winds of 30 miles an hour, perhaps more. The cross winds are shifting. It is a very difficult process, to bring a large plane in at 150 miles an hour in these adverse conditions.

We propose to extend the night over-ocean approach process finally to daytime operations. An objection might be phrased: "Well, we couldn't possibly do that at twelve noon or at nine in the morning or at five in the afternoon." True. Because we know, looking at schedules, planes are scheduled to take off by the dozen, within a few minutes of twelve noon. Because it's easy to remember, a minor convenience for the passengers. Thus one thing that would be required is to spread the flight out throughout the day--not have them all bunched within a half an hour of one another three times a day.

Secondly, an obvious proposal is to make quieter planes. They have been worked on for over twenty years. The methods for quieting jet engines were known from the first. The important scientific work was done in 1954 and 1955 by a Professor now at Cambridge, England, Sir James Lighthill. He laid out in great detail virtually all of the scientific background needed to quiet a plane. It is only necessary to slow down the exhaust gas. That makes a tremendous change in the amount of noise coming from the engine. Of course, it costs a few percent more to operate such engines. I would believe, if it were not for the lead time factor, that that should be done. There's no reason why passengers shouldn't pay another five percent on their ticket to quiet the engines. The airlines could recover the cost from the CAB. But for some reason which, frankly, I don't understand very well, such changes are vigorously resisted. How long would it take to quiet engines? Estimates vary from one-to-two decades. The process which would be carried out would be one of gradually replacing airplanes as they got older, newer planes being brought in which are quieter. It's a long, long process.

What of sound-proofing? That's done in a few rooms in a few schools over near the airport--not, I feel, a very good solution. What is happening is that people are being driven inside sealed boxes--that's what sound-proofing is--and must live there. Well, those of us who live in Los Angeles don't find that an appealing answer to the problem. Move the airports away? Los Angeles Airport isn't going to be moved in our lifetime. So it's hardly worth discussing.
A night curfew? Many cities in Europe with their large airports have night curfews, so that the planes simply cannot land during sleeping hours. I see nothing inherently wrong or immoral about that. But I don't think that the FAA would approve that kind of change, though it seems to be something that could be thought of.

It's suggested sometimes that citizens, close to airports move. Let's have a look at the record at Los Anglees Airport. It was first established in the City of Inglewood in about 1928. The City of Inglewood was incorporated in, 1908. There were residential areas, although not as dense as they are today, in that general district. I propose that it was clear that there would be residential area growth in the direction of the present airport. The city was growing rapidly, everyone could see. Obviously, this was going to be an area of heavy residential occupancy, and that, of course, has happened.

I'd like to add one note. A report financed by a government agency proposed the conclusion that you could soften up, as it was said, the citizens and their reaction to jet noise. The way to do it was to bring the flights over first one community and keep them there for some weeks, the furor would rise. Then switch them to another community, and keep them there, and so on. Then come back to the first community. After a while, people will say, what's the use. I suppose no comment is needed.

Is there Evidence for an Effect of Noise on the Fetal Life

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I'd like to start by saying two things rather informally.

First of all, as is the case, I think, with any ongoing scientific enterprise, what I'm talking about is work in progress rather than firm conclusion. I think that I have heard rumors of some vague criticism of something that I have done which is based upon something somebody thought I might have said or written, rather than what I did.

Secondly, I'm interested in noise in general, and not aircraft noise. And the LAX situation happened to turn out to be a very convenient one to test, quite candidly, what I consider to be a reasonable hypothetical concern. Now, the general question of: Is there an effect of noise on a fetus is answerable without any equivocation. of course, and the answer is yes. As you know, loud sounds will arouse a fetus. In fact, one of the new tests for fetal well-being is the greater than 20 per minute heart rate increase upon the application of loud sounds to the abdominal wall of the mother. The attenuation through the body wall is not very great. At 10 15 decibels, it's not usually realized that the fetus is not as well protected as possibly we might all imagine from the sound of the environment. As a result, it is possible to look at animal work, which I think is the place to start. If saccharin is something that can be fed to animals for scientific information, so can sound. And this work is fairly straightforward. Certainly, most of it's been done on rodents which Dr. Karl Kriter, who some of you might know of, considers to be a weakness. And I think I agree with him, it is a weakness, but it's the best we have. And a lot of people don't agree with me that it's a weakness, including some of the best people in the field.

Certainly, there are at least three effects which we can demonstrate in experimental animals. First of all, there are changes in the biochemistry of the inner ear in the fetuses which have, during fetal life, had the mother exposed to loud sounds. This is unquestionably, it seems to me, a direct effect. We know that if the heart rate's going to go up when you apply sound, obviously the ear must be working. So that in these circumstances it's not astonishing to find the evidence of stimulation in the inner ear. Specifically, for any of you that might be interested in changes in the enzyme levels in the inner ear fluid.

Another possibility, of course, in the second place, is habituation before birth. This occurs possibly in the human, I'll come back to human data a little later. Certainly, the fact that you do get heart rate changes and probably habituation to the application of noise is not at all startling. Finally, there is in the rodent very likely--I know of only one negative study and several positive studies--interference with the course of development. Perhaps the best work so far was done by Dr. Bounnelle in France. I admit she wasn't using aircraft noise, she used recording of the Paris subway, which is not a particularly noisy one, actually--at least, not to me, but then I worked in a brass mill when I was much younger, and I don't hear very much, anyway; except, of course, my own ears ringing, which gives me something to do. Obviously, in her case, the last letter I had from her--and I feel in a way that I'm just a week or so too soon with what I'm telling you because I shall see her next Tuesday, or next Monday. And I'm on a program with her next Tuesday, and so I'll know more of what her recent work is. Her published work, however, suggests that most of the defects that she gets in her rodent puppies from the application of noise to the mother have been central nervous system development. A very common--well, not common, fortunately, but there is a well-known kind of defect that you get in the human called anancefali and spinal bifida. These are closely related and probably similarly caused defects, and simply means lack of development of the brain. In spinal bifida, the spinal column is not closed, and the spinal cord is exposed. This, as we shall see later on, led me to do a further analysis, something I had not done before. We would, of course, I think, prefer primate data, but primates, unfortunately, are not quite as prolific and, among other things, I have inquired about the problems down at the San Diego Zoo, and I'm told that they, in general, have none, but there aren't many births. Abnormal normal births among non-human primates are very rare, although out of 30 ... births they had down there they did have two abnormals, which is quite unusual. But I'm not going to base any sweeping statement on that.

So then, very briefly, I've indicated that there is a series of studies--this is not particularly speculative, this is pretty good solid fact that this kind of thing goes on. If it's of any interest to any of you, you might be interested for any of you that might be interested in changes in the enzyme levels in the inner ear fluid.

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So then, very briefly, I've indicated that there is a series of studies--this is not particularly speculative, this is pretty good solid fact that this kind of thing goes on. If it's of any interest to any of you, you might be interested in knowing that even in the bird there is some effect. Quail eggs, when exposed to loud noises, will hatch a day or so sooner than if they are not. So apparently there is no doubt but what noise is getting through to the fetus.

Now the interference with development is quite another story, because I seriously doubt--and I shall consider this point before I finish--that this is a direct effect. It's always difficult to transfer this kind of laboratory result to human data, or the human condition, the reason being that we are willy-nilly stuck with retrospective data. In a sense, we have to find natural experiments, and we have to judge, and we have to compare one district with another and this sort of thing. And this is never entirely satisfactory. Nevertheless, one does the best he can, and he proceeds on the basis of plausibility, and tries to boot-strap his science up to some kind of a respectable level.

In the human, there is no question but what the fetus, as I have indicated, responds directly to a loud sound applied externally to the mother; that is, the diagnostic, if it's a non-obtrusive, hopefully not particularly harmful kind of stimulation which indicates that the fetus is alive and listening, and getting probably a startled response from the loud sound and the heart rate goes up 20 or more beats per minute. This is, of course then, not particularly startling, really. I might say at one time, and still now, there's a lot of ultrasonic probing of the abdominal cavity, and I might say that this is something that any of you will experience--and not too many of you probably will. It's not been shown to be harmful.

Well, that habituation occurs has been indicated by a very interesting study from Japan by Ondo and Hatari, a rather recent study, using infants which had been or not been conceived and gestated--is that the word--under the landing patterns of Osaka. Ando and Hotoy are rather famous for having done an early study on birth weight as related to the landing pattern at Osaka Airport, and indicating that birth rate went down upon the initiation of jet service. But in looking at the infants, and comparing those in this region with those who had not had their prenatal experience in the noisy area, they're able to show that the exposed infants had apparently been born habituated. They did not show the same electroencephalographic responses to the simulated jet noise as the unexposed babies, so that there must have been some kind of a direct effect which would correlate with certain ... animal work and so on, directly through the abdominal wall and operating on the fetus. We get onto more shaky ground, really, where I think premature assertions are to be avoided, but nevertheless I will stick to what I have said. And that is, "Will noise lead to an increase in abnormal births in the human population?" We're pretty sure it does in a rodent. But the question is, "Will it do so in the human population, so let's look at the evidence to see if this is plausible, to see if it's perfectly ridiculous to even think about it, or whether or not we have some suspicion here. Let's take a look. Well, certainly the Ondo and Hatori original research on birth weight would be an indicator of some kind of effect interfering with development. Interestingly enough, this had to take place during the first five months of gestation; moving into the area after the fifth month apparently doesn't make much difference. This is a little bit startling, since the birth weight, of course, is something which in the last several months of pregnancy is doing nothing but putting on weight and so forth, as far as the fetus is concerned, anyway. The formation and the presence of abnormality has already been determined. Nakamora and Kyoto have quite recently reported a decrease in birth weight for babies born in noisy sections of the city. This did not specifically relate to aircraft noise, but rather to traffic noise. Apparently, Iyoto is divided into noisy and not-so-noisy and not-all-noisy areas by some agency or other, and he based his conclusion on this. I didn't know about this work, frankly, until he sent me a reprint, which is embarrassing.

My own work with Mrs. Judy Tosher is an attempt to take advantage of a natural experiment: namely, the fact that we did have some 90 decibel contours available to us, that we had census track data, census track maps to look at. And also we were able to copy the birth record tapes from Los Angeles County. These are, of course, public documents. But let me say one limitation in the study, and in any study of this kind, is the fact that California statute law specifically prohibits anyone from getting in direct contact with any parent on the basis of the birth record for purposes of--well, you can get in touch with them and sell them baby pictures, but to specifically get in touch with parents who have reported abnormal births for the purposes of research is directly against statute law. In fact, it's a little tricky whether or not you could even do the tapes. We were able to do so.

Now, our original work began by separating the races. About half the births in the target area are Black, about half are white. In general, it's a universal phenomenon that the number of birth defects among Blacks is less than among Whites. Rather significantly so, the ratio in Atlanta is about the same as here. Another complication is the factor of the east-to-west gradient in birth defects: The further east you go the more defects; the further west, the less. I don't know why that is, maybe it's something in the water. But this is a general phenomenon until you get around Liverpool or some place like that where they're really high.

In other words, it's an interesting phenomenon. So we have to separate the races out. Then the question is what to compare these with, and we chose to compare then to what we might call a base rate. It's like going, say, into the center of Finland, and there's an area there where the number of heart attacks and fatal coronary events, accidents, and so forth is staggering, a lot higher than any place else in the world. That is an interesting phenomenon. And so as a control, given the fact that we had to be careful of the east-to-west gradient and so forth, we took the rest of the County. We did that with the feeling that we were stacking the cards against ourselves. There's a lot of noise around this County other than simply in the airport area. But there we did show changes in the expected direction. The Black sample was quite significant, if we take out polydactyllism, which is a heavily genetically-determined extra finger which is very common in Blacks; it's the only abnormality which is more common in Blacks than in Whites. The white births were significant at the 8% level which ... Upon seeing Bounelle's publication recently in a very fascinating little called The Effect of Noise On Wildlife--by which they don't mean the local bar, I'm sure, they mean animals and so forth-- ... she was getting mainly nervous system defects. I then went back and looked at the anansephali and spinal bifida, and there the significant just goes off the scale ... way out around the 1% level significant for those particular disorders.

So be it. The next question is: What else could be doing this? Well, let's start by ruling out radar--that's been a suggestion from several people. As you know, nowadays we're beginning to realize that maybe radar has an effect other than simply heating it up; there may be--it's non-ionizing radiation, you presumably ... A lot of people that have been standing up in front of boat radar have gotten awfully confused recently. I mean, it's--they're very dangerous. They put out about, oh, five killowatts ... About the only radar I think we ought to think about from the aircraft is radar altimeters. The altimeter is--on a modern plane--is a radar beam ... And the standard one is a Bendix, and the last I knew that was putting out four tenths of a watt, and that was the most powerful one that I know, from the handbooks, anyway. And four tenths of a watt, especially inside a house, basically heating affect is not going to do very much. So I don't think it's that.

Pollution--I am not really, from looking at the environmental impact reports and other monitoring done around the airport, I wouldn't have thought offhand that most of this area we're talking about is particularly a heavily-polluted area. And some of my distant colleagues down in the School of Medicine were working on birth weights as related to air pollution. This particular area is one of the low pollution areas, and one of the high birth weight areas. So I don't know. There might be some heavy metals that haven't been monitored, I just don't know; I'd be glad to be corrected on ... Carbon monoxide, which is the thing that you would think would be the most dangerous is certainly not high in this area. It's higher right outside the terminals, of course, because of all the automobiles--12, 14 parts per million, but not out in the boondocks of Westchester ...

One more thing one would like to ask, I think, about this for scientific satisfaction is: Is there any plausible mechanism? I think a lot of people are very skeptical about extrasensory perception for one reason: and that is, that it's pretty hard to figure out what mechanism could be going on. So therefore, in the absence of any plausible way in which the system could be working, one tends to be, perhaps, skeptical. So let's look at some possibilities, and let me step, not leap, to a conclusion.

Let's look at some of these quickly. Is there a direct effect of noise on the fetus? Well, we've shown that there has been. Nevertheless, you see, if anansephali and spinal bifida are determined by the end of 28 days of gestation, and the direct sound effect that we can detect by heart rate changes and so forth have to depend on the auditory mechanism. And probably any such direct effect is too late to determine this kind of abnormality, anyway. So I don't feel that this is the case, despite our ... who get all excited and break their way out tryin' to get away from the noise. I don't know what they're doing. It doesn't seem to be quite the way to do it.

A much more plausible possibility is a stress response on the part of the mother. We know from very good research done in the home in the LAX landing area that there is disturbed sleep on the part of people living there. This is done with recording brain waves. I don't--perhaps I should say technically what's going on here. There is a kind of sleep which is called Rapid Eye Movement sleep or REM sleep. This peculiar kind of sleep was not really suspected until relatively recently, but this is a time of dreaming. And apparently REM sleep is very important to the well-being of the organism. Even turtles have it, so they must have at least some psychological... It's the REM sleep which was apparently reduced under the landing pattern; and I might add when I'm saying this that three or four months later, after the shift of the landing pattern over the ocean, this disturbance would still be found. It seems to be sort of a habituation to lack to REM sleep. What would be the predicted outcome of lack of REM sleep, and the answer is irritability, a tendency to confusion, ... in general. If you're feeling irritable today, it's possible you haven't had your REM sleep. I might say alcohol interferes with REM sleep, too. Just another good reason for protecting your liver by not drinking.

Also, there's been some very good work in--I think some of you might like this reference, which is a collection of papers in--I happen to have the reference in the bibliography of something I ordered--in the International Archives of Occupational and Environmental Health in 1977, Volume 4. It is a series of papers by a Dutch team headed by Dr. Edima at the University of Amsterdam's ... Laboratories. Dr. Edima has been looking at villages, towns, what have you, in the Netherlands near Shripold Airport--that's the airport for Amsterdam. Fortunately, they have changed their flight patterns from town to town, so we have some rather nice built-in experiments. His results are very interesting and very striking.

You see, in the Dutch Medical System--I suppose it's sort of like the British in the sense that your first contact, if you feel anything, is with your physician, your General Practitioner. It's not entirely true in Britain. Dr. Herridge is a psychiatrist, Bill Meecham mentioned Dr. Herridge, and consults at two of the mental hospitals in the region of the

Heathrow Airport ... But here we have a check on the presenting disorders; and there, the noisier the village, the greater the complaint of psychoneurosis presenting to the General Practitioner. In a moment, I'm gonna tell you something else which is very dramatic, and which might be...

Also, the work in Liverpool by a person by the name of Stod--not on noise but on mother's stress--so I think rather clearly that the morbidity, as he called it, the nonviability of the infant was related to stress during pregnancy of the mother--continuing stress. Not just a little stress, but a continuing stress. And the same conclusion was reached by ... in a rather extensive and interesting Finnish study looking at the various conditions leading to abnormality--in her case, particularly to cleft lip and cleft palate, and finding that stress to the mother of one kind or another was an important variable.

And I'm saying that, putting together the REM data, and the Dutch and the Meecham work, that it's entirely possible, then, that the noise is acting as a stress ..., since we do know that the injection of cortasoid will lead to abnormal fetal development, and that would be a common output from noise stress, that we at least have a plausible link here. I'm not saying it is a link, I'm saying it's a possible link.

Another possible relationship might be drugs. I suppose most of you know now that belting down two or three martinis every evening during pregnancy is not guaranteed to produce a viable, normal infant. On the part of the mother, of course, I don't know of any direct--yes, I--there is some direct--perhaps you know that Operating Room Personnel, surgical nurses sort of stuff, have a really, significantly, abnormally high proportion of abnormal births. It is not generally realized that the wives of Operating Room Personnel also do, and apparently there's enough ether and what-not floating around in the breath of the individual to be a transfer. So maybe belting down ... too many martinis, this could have an indirect effect on the mother. But the point is that this Finnish work by ... shows--in Edima's bunch or team--shows a dramatic increase in the use of both prescription and non-prescription drugs with the level of noise from over-flying aircraft. And fortunately, as I say, the flight ban was changed and it was possible to see the shift in the prevelence of drug use; and it's really great, it's not just a little wee bit, on the basis of airplane patterns.

So another possibility, you see, is an indirect one. And we might be finding some kind of a plausible effect here on the development of the infant because, you see, birth abnormalities are multiple caused. It takes a susceptible population, and then it takes some kind of an interference with development. Certain strains of rats or rodents will probably develop more abnormalities under noise stress than other strains. So that there's got to be a genetic component, surely, and the racial differences show that. But on the other hand, we're talking about just one other possible influence.

My last information was that there was someone who was looking at the Atlanta data, Atlanta Airport, and I'm quite sure somebody is looking at San Diego which is, of course, a classical example of where not to put an airport. I feel like giving a tip to the waiters in the El Cortes Skyroom every time I go in there because they've been--they're sitting right there ... but at any rate, so that we'll see whether or not this retrospective correlation holds up. Now in the meantime, I'll stick to my original conclusions, no more and no less. And just for the sake of the record, I'd like to read them. It says, one statement is: Of course, it cannot be claimed that the author's analysis demonstrates that jet landing noise causes tarotism. We look at other alternatives. Then I finally say: If our results are not definitely conclusive in implicating noise, they cannot be dismissed out of hand either, etc., etc., etc. As a result, it is at least plausible, and when placed in a public health context with its implications for human welfare, it leads us to recommend great caution in permitting the elevation of noise levels in any inhabited areas until considerably more information is available. I interpret that as a call for more research. And for that reason, I started by saying that I am essentially letting you in on the kind of reasoning which has led me to be interested in this problem in general, and perhaps at an early-on stage in something that might turn out to be very, very important; or, in a way, I'd be very happy if the opposite occurred, because it gives me no pleasure to think that they're going to allow abnormal births from any cause. I would be just as happy if it didn't pan out ... to be perfectly frank. I can't see how any stress shouldn't have some effect, but it remains to be seen how much.

I'd be happy--thanks to the schedule, it looks as though I've got--I geared myself to get done a little early, and I've gotten done very, very early. Are there any questions--

U.S.: What was your first conclusion?

FNJ: My first conclusion is that the--well, my basic conclusion is that the--that one study like this cannot prove anything, but that we have established the plausibility. Everything I know is in the same direction; and therefore, I think that the whole area has to be looked at very seriously, very seriously indeed. I'll know more, as I say, by the end of next week, when I talk to some international experts on it.

U.S.: In the course of your discussion, you mentioned that 20 DB is possible ...

FNJ: We use the same ones Meecham and Shaw did.

U.S.: Okay, by that do you mean 90 DBA max level?

FNJ: Maximum. It's a DBA scale. Perhaps I might say something about this general problem of measurements which has been brought up. There are a number of ways of measuring sound levels. The DBA scale--is there anybody does not, who--I suppose everybody knows what a DBA scale is. No Well, I'll tell you. It's a--as you know, the human ear is not equally sensitive to all frequencies of sound, and DBA is an attempt to correct the sound measurements for that condition. In other words, it weights the center part of the sound spectrum, around 3,000 cycles, 1,000, 4,000 cycles--more heavily than the extremes to which the ear is less sensitive. Now, usually airport noise measurements nowadays are not made that way; they're made with an average going frequency, and giving a weighted average across the scale.

And then--okay, one more thing. And that is that the attempts at the psychological evaluation of airport noise have weighted the incidents of noise in the function of time, and they weight nightime noise three times as heavily as daytime. The nighttime flight is given three times the weight of the daytime. Now, for example, if one looks at the contours around Heathrow--and I've had the pleasure of doing this with Dr. Herrage--you will notice that when they initiated Concord flights out of Heathrow, four flights a week at that time, were adequate to shift significantly the calculated exposure contours around Heathrow in a take-off pattern. And that was done because of the noise ... and given a weighting, which then was ... an attempt at a psychological ... Yes?

U.S.: Could you tell us whether or not the American Medical Association or the UCLA Medical Center (which is one of the best) have made similar studies ...?

FNJ: Not to my knowledge. Well, I think that I've seen all the literature that--at least, unless somebody startles me with some--on this particular--if we're talking about aircraft noise specifically.

U.S.: I'm talking about all kinds of noise.

FNJ: The best introduction to that is a book by Karl Kryter on the effect of noise on man. There's a large literature on noise and stress. I don't know of anyone in the UCLA Medical Center who is working on this particular problem at the moment. It would startle me.

US: Okay. If you had a research program set up--there've been some startling remarks made here this morning--what do you think that it would cost to set up such a research project to have a thorough, comprehensive, independent study made? ... anybody that generates noise?

FNJ: Well, pricing this out is not just the easiest thing on earth. Let me think of what it cost to do the rather limited air pollution study which ... Associates has just finished. Well, if you're willing to look at what I would suggest as a research strategy, it would be looking or searching for a combination of noisy environments with good public health records. And under those circumstances, I don't think you're talking about a staggering sum of money. We're talking about hundreds of thousands of dollars per, absolute most. I don't see why it should be a fantastically expensive situation, frankly. Now, I may have to eat my words--not quite lunch yet.

US: Would it be your opinion that the American Medical Association, who gives us each physicals to tell us what's wrong with us, should render an opinion as to what's injurious to the human ...?

FNJ: I don't think it's the role of the American Medical Association to become necessarily involved as an organization in something of this kind. It seems to me that this is something which Public Health Service-funded or Environmental

Protection Agency-funded research to private individuals who have research programs would be the thing to do. I don't know if the AMA as an organization, unless you asked them, "Would you please set up a Committee," or something of this kind, or ask the National Science Foundation to set up a Committee, something of that kind. But that wouldn't be necessarily the practical way to go.

The way the government works is with these things called RFP's. They put out a big RFP on this particular topic, a Request for Proposal. And I think that there are plenty of really competent research organizations around that can handle it.

US: Well, Dr. Meecham mentioned this figure of $100,000 ... Do you want to make a recommendation as to what agency should conduct this ...?

FNJ: No, because I don't think that research is properly and necessarily an agency function.

US: Well, I'm an engineer. I'd like to solve the problem instead of talking about it all the time. You can talk the thing to death; you can talk about this thing for over 20 years. So how do you reach the foundation upon which you would build a solution, that's what I want to know.

FNJ: Well, I should think that here again it's a question of--partly, it's a matter of individual enterprise ... after research funds from appropriate agencies, where they're given a peer review, and--I mean, I don't like to thrust everything back off on the government agency, I'd like to see the--

US: Well, for your information, over twelve years ago we approached the Ford Foundation and Rockefeller Foundation, and numerous others, to go into this problem, project, proposition. And you know what the answer was that we got?

FNJ: Well, obviously if we're talking about an action-oriented thing, that would be one thing. But if we're saying, okay fine--I think it would be--okay, so I approach the March of Dimes ... But I would say that it would be a perfectly legitimate request. It would be a ligitimate thing to do the statistical work necessary. All I need is the access to go out and find the places to do this kind of retrospective work. I don't know if I'm any comfort to you, because I'm obviously not.

Jim Hoyt from Santa Monica: I have two related questions. I need an answer to the first one before I can ask the second one.

I'm back to the question about the contours of the noise. It seems to me that there are really two ways which we can accept noise contours. One is sort of an average noise in the area. The other one is a single event, or what we call the ... I'm wondering again if you can tell me which those were.

FNJ: They're single events.

JH: So those are single events. In other words, what we're saying is that this--that the 90 level, the loudest single event there was 90.

FNJ: That's right.

JH: Okay. I guess my second question, then, is based upon your study. Are you prepared to suggest to public agencies that there are contour lines around airports in which people should not be permitted to live?

FNJ: Well, I think I'd give the same answer as Dr. Herridge--Dr. Herridge is now on a Royal Commission which has to do with airport noise. His suggesiton is impossible in Britain because they never ... You see, if they just built their new airport down on the Coast the way they'd planned, which they can't afford to do because it's all ..., but his suggestion is that the noisy areas should be turned into light industry because the factories are so much easier ... than ... So that's one possibility. The zoning approach, of course, is the one that a municipal organization would think of first, I should think. Was that the answer?

JH: I guess I'm looking for a more direct answer. ... can you legitimately say that on one side of this line we can ligitimately tell people that they have a ... quality of life if they live there, and on the other side we have to tell them, out of this responsibility, we have to say that we believe that your quality of life would be diminished.

FNJ: Well, yes, but you see, the difficulty is this, that about 25% of the people just aren't bothered. Also, it's an incredible thing to start to look at things like air pollution, and look at the Torrance Standard Oil Plant; they're gettisome pretty good pollution from that downwind. You cno effect upon house values or anything. This interference with the market is something which, I think, a government agency has to take, you know, very seriously. I personally, without looking at the specific situation and without knowing more, would not want to answer you in an inflammatory way.

US: Question concerning quieter planes.

FNJ: Oh, before I answer you, one more thing. The new generation of jets, particularly the Lockeyed Tristar, putout 20 decibels less sound than an old 707. Now 20 decibels means it's putting out just exactly one hundredth the sound energy. And I can assure you I have had the pleasure of standing again with Dr. Herrage under one of his hospitals listening to these jets come into Heathrow. And the L1011 came in, and it was not particularly objectionable in the normal ambient background, ambient noise in the area. So that to some extent, I think that technology is gonna solve some of the problem, that 90 decibel contour is gonna move in a lot closer. Okay, I'm sorry, sir, I interrupted your question.

US: Question concerning health effects.

FNJ: One of the manifestations is ulcers. They make many people quite concerned. And my question is could you add-- of noise inducing ulcers, or of the people who have ulcers how they react. Now this you could do in your Lab, because you could simulate the jet noise ... by taking ... patients with ulcers and seeing how they do react to this sound.

Airport Noise and the Consultant

Walter Gillfillan
Airport Noise Consultant

What I want to talk about I guess would be called a case study if, in fact, the case were completed. The study is not completed, the case is still open. So I think I will tell you today about something we are doing in the San Francisco Bay Area which tries to respond to the problem area that you have before you on the conference subjects today. It is an airport land use-type study, one of the first ones that has been funded under the FAA Planning Grant Program. I have in the audience a number of people from that project on the so-called other side of the airport fence, who will keep me honest. A councilman from the City of Millbrae, Mr. Arthur LePowur, is with us today. And one of the leaders of a very active citizens group, Anita Aravilla, from the Air Force group, Airport Impact Reduction Force, is with us. And I think that they will have an opportunity during the discussion period to be sure that I have represented the project correctly, and the facts as best we know them. I see also in the audience someone else who is about to embark upon an airport environ-type study, from the City of Monterey. I welcome them to this particular topic.

One of the things that I've suggested as we try to describe one of these so-called ANCLU studies--Airport Noise and Community Land Use-type studies--is to say that it may be, in fact, the only handle in town that exists at the present time in which people who have a concern in the community side have an opportunity to meet and work with those on the aviation side of the airport fence in trying to find a resolution to the problem. It is kind of a frustrating-type study format, because it offers no guarantees. It has two objectives, two kinds of products, that principally come from the effort.

One is an airport mitigation plan which is supposed to be offered to the airport owner, and is supposed to indicate the kinds of actions that the airport owner might take to mitigate noise impact. And more broadly, although noise is the topic that we're dealing with together today, that the impact, in a very broad sense, which may include some of the problems of air quality; it may also include problems of ground access, and congestion on local County roads and city streets as well. That's one of the products.

The second one is a product offered to the community or communities in the area surrounding the airport, which is the ideas on how land use planning might be undertaken, or the kinds of actions that cities or counties might take to try to mitigate the impact of the airport's present activity or future activity might have upon those communities. Now the frustrating part of that, and the thing that isn't too much of a solution for some of you, is that those are advisory kinds of products.

And to use our example on the San Francisco Bay Area, San Francisco International Airport is owned by the City and County of San Francisco, and is located outside of its jurisdiction in the County of San Mateo. There are nine cities whose jurisdiction surrounds the airport who are in some way impacted by the airport's activity, impacted both in the negative sense (as we usually are dealing with it in this kind of a topic area) and also in the positive sense as others might discuss it in terms of jobs, employment, and so forth). There is a setting, then, where the airport owner has no direct political relationship or responsive institutional relationship with the voters and citizens that are impacted by its activities. And for a long, long time, as in the history of many other local situations, there has been a constant attempt on the part of the communities to deal with the airport and with that problem, and finding some frustration, perhaps more frustrations than solutions, and have been unable, in trying to deal with that, to find a handle.

And I guess, Bill, if my topic for today were going to have one--if I were going to have a title--perhaps it would be simply "The Handle." I think those in the community that have been frustrated over the years have discovered that turning to the airport owner doesn't necessarily resolve the problem, and may give some opportunities for mitigation action. And they may have found some satisfaction there. They may have also turned to the FAA, and there again perhaps a great concern, perhaps some mitigation actions in terms of air traffic control procedures have been helpful. In some parts of the community--maybe not to others.

Turning to and discovering that there are regulatory agencies that are involved in air transportation at the Federal level with the Civil Areonautics Board, and at the State level with the California Public Utilities Commission, have discovered that, once those certificates of convenience and necessity are granted, that they seldom contain any kinds of conditions that deal with hours of operation or equipment type, or have anything to do with the subject of impact, particularly noise impact. So they find themselves frustrated at that particular turn.

Local government, turning usually to their immediate level where they would normally find a responsiveness to the problems that they're experiencing in the community finds the locally-elected official similarly frustrated, finding that he has a difficult time dealing with the counterpart who is the owner of the airport, because that counterpart constituency is not involved directly in the voting processes, and therefore in the need to respond. And that's kind of a vicious circle, assuming that many of you in the audience that are in noise impacted areas have gone through that kind of a circle.

And coming around the other side, finding what appears to be absolutely nothing you can do effectively about problem. You may have organized groups, you may have testified at hearings, and you may have tried to deal with EIR's and EIS's. Over the process probably have gotten yourselves almost a consulting license in the practice in the State of California in the area because you've read so much and been involved with so many meetings that you feel that you know all there is to know about something, but you have no way that you've found that you can deal with the problem.

Let me talk, then, a little bit about the handle, the environs-type study. I think that I might start out with perhaps a little historical through that--I draw this out of the--there was a May symposium that FAA sponsored on the subject of noise.

I guess as a personal observation , I'm sorry that that symposium and this symposium, in fact, weren't one and the same. There may have been attempts to do that, and they may not have been fruitful. Because I think there were those of us who were on sort of the aviation side of things who were involved in the May symposium that probably should hear some of the things that are talked about, and some of interests that the people that are attending this symposium may have. And it's only when we can get those two groups together to interface that we really have some good opportunities. I'm sorry that we weren't able to cause that to happen.

In one of the presentations made there by a representative of Western Airlines, he used a quote from the old Doolittle Report of the President's Commission on Aviation which was founded in, I guess, in the early part of the Eisenhower Administration--I may expose my lack of knowledge, but somewhere in the early fifties. And in part of that report, a quote out of it was the following: "The immediate problem is to find a way to protect airports and the people residing near them." And he used that as an example of 26 years or knowledge, apparently, about the problem we're trying to deal with, and the inability to come to grips with it in terms of an adequate solution for many people. I kind of picked up on that point and said well, if we're going to do a little bit of historical background, maybe we can kind of bounce back over and see some of the things that maybe we have tried to do.

I guess it was up until about 1959, the old FAA was known as the Civil Aeronautics Administration (CAA), and had tried to sue some of the experience in the early days of the military, and the jet experience and the impacts they had on communities, and tried to develop some kinds of guidelines. Now those were used to focus on the idea of what the community should do, to not build houses, so they wouldn't be a problem for the airport. Nothing in that approach dealt with the idea that maybe the airport has some opportunity to mitigate or impact upon the community.

So starting there in the very late fifties, and moving on into the '60's, we began for the first time with the idea of including noise in the certification of new aircraft. I suspect that would have been hesitancy in the 1950's to ever have thought that something like that could have ever been considered as a condition of certifying a new aircraft, but that was the so-called Part 36, the beginning point that now had been expanded, with EPA working very hard to try to further restrict the kinds of noise levels that will be coming out of new aircraft engines. Also in the 1960's were Federal mortgage guarantees for the first time, with VA programs and FAA programs indicating that noise impact areas may be a reason not to provide mortgage guarantee action.

In 1970, the State of California with an airport noise regulation, the first in the nation, takes rather a major step, interestingly enough introduced and now administered by its own Aeronautics--at that point Aeronautics Department--now Aeronautics Division, which is generally a group identified with the promotion of aviation, and took a tremendous amount of heat at the time they went into that particular program. And it was an amazing kind of action. I think that the processes that came out of the NEPA (The National Environmental Protection Act) and California's counterpart, SEQA, offer yet another kind of device that tries to let us deal with the question of noise and its impacts, and to try to deal with future conditions, not just the ones that we're looking at today. The FAA more recently coming up with their Airport Noise and Land Use Compatibility Program under their planning grant, the so-called ANCLUT or environms-area study, that's the one I'd like to talk about a little bit more as we go along with the handle.

And then we're currently in the Congress dealing with the so-called Anderson Bill; the formal name, I guess, is, what, Airport and Aircraft Noise Reduction Act, the so-called Anderson Bill. Again, for the first time at a National level, trying to find some way to actually take some kind of specific action to mitigate. And over the years, surprisingly enough, a number of local communities who have owned airports have taken a number of actions which guess, are raised into questions to the effect they have on interstate commerce and other kinds of questions, but nevertheless those actions have been taken.

Here in the Los Angeles Basin, a number of large airports have restrictions adopted by the locally-elected officials, in one form or another that restrict the kinds of activity at the local airports. And that list would include Hollywood-Burbank, Orange County Airport, Long Beach, as examples of those kinds of restrictions. Even more recently another area of similar actions involving San Diego, to some extent is yet another situation.

Well, those are things that have happened. Some of them have happened a long time ago, some of them more recently. Some we would say yes, they've happened, but they haven't resulted in the kind of relief that we've been looking for, nor do they appear to have the opportunity to solve our problem as the aviation activity grows in the future. For the things that have happened most recently, perhaps the reaction is, we can't tell yet. The Anderson bill sounds like some very good ideas, and it has the opportunity for a lot of production; but we haven't seen the result yet, and we don't know quite yet what that will be. So we still, despite that 26 years of experience, have that dilema before us.

Let me talk about the handle. One of the things happening most recently is the fact that you can do a so-called environs-area study using Federal ADAP-type program funds under their planning grant program, 80% financing or 20% of local funding. That program tries to talk about those two products I mentioned earlier: One a plan for the airport side of the fence, and another a plan for the area outside. It has the shortcoming that those are advisory products, and no one has to act based on those.

In the particular semi-case study, then, that I'd like to use as a reference, San Francisco International Airport in the San Mateo County joint exercise of powers agreement, brings the two principal public agencies that are involved in the problem: The airport owner, and the County of San Mateo trying to represent the nine different city jurisdiction and its own jurisdiction in the process. The whole effort started, not because there was a Federal program, but it started back in 1972, somewhere in there, four or five years ago--five years ago--when it was really, I think, the chairmen--the chairwomen--of the two Boards of Sueprvisors, Diane Feinstein representing the City and County of San Francisco, and in San Mateo County with June Fasler--got together and agreed that there was a mutual problem that warranted some kind of an open action to try to deal with it. It took them something like five years to finally get to a joint powers agreement and some kind of a study effort, very long period of time.

The marriage is a reluctant one. In fact, it's been suggested that as we proceed with this study, because of that marriage relationship, we probably are committing unnatural acts. And I have also likened the job of the Project Manager , which I happen to have--I'm the neutral, so-called neutral party. Neither of the two principals would trust each other's staff to staff the project, so they went to the outside. And I liken that to someone from a javelin team who wins the toss and elects to receive. So I'm in that middle ground. Five years--a long time to reach an agreement that says simply, we will agree to study something, and what we've agreed to study will have basically two kinds of products, and that those products, we agree at the beginning, neither one of us have to do anything about. We simply receive them. We're going to run this study for about two years time, and that is a very long time, as technicians would look at it, because the technical work they were going to do is really not that awesome. It's not going to be really that unique. But what we've tried to provide for is a long period of time for interaction between those in the community and those that own the airport to see the kinds of facts that we're going to try to work with to begin with, go give them an opportunity to challenge those facts before anybody tries to use them in any way. To give them an opportunity to see the analysis that we're doing, and the pieces and parts, not just the whole package at the end but the noise parts, the forecast parts, and the ground access parts, and the air quality parts. To give them a chance to challenge the adequacy, give them an opportunity, for those in the community who can deal with the subject matter on a technical level, an opportunity to do that. To challenge our consultants, challenge our facts, challenge our analysis. The technical work doesn't take two years; the opportunity for that interaction, we think, takes that long. Perhaps we'll find it's going to take longer.

The organization of this joint powers agreement--let's try Slide A and see what we've got--I'm not going to try to deal with this in any detail, simply to say that the relationships are complex. And think that's all that we need to--not only are the relationships complex--they're out of focus, or is it me? They're out of focus! Let's try it a little closer. Okay, Bill, we may have to do that. We'll do that only briefly, Ellie, and then we promise to open the door back up. Okay, it's in focus for me, right--like about there. No? Okay, okay, I really don't care if you--I want you to look at the blocks, and all I'm gonna say is that the big block in here that says this is that joint powers board of control made up of those two partners. They've got a consultant down there, and over in here the--one of the joint powers board is in the City and County of San Francisco, but it has an Airport Commission, so then it's got two parts to it. And the County of San Mateo is, in fact, a legitimate public agency but, in fact, it has the interests and it's trying to represent the interests of nine different cities that are also part of that general community. Then we have the consultants, and their various pieces and parts. Over here is the big array--there's the nine cities; there is the local transit agency, and the Regional agencies represented by the Bay Conservation Development Commission, the Metropolitan Transportation Commission, the Association of Bay Area Governments, and the Air Pollution Control District, and a Regional Water Quality Control District. For people who are citizens in a community, if you aren't really a big activist in all the things that go on, Regional agencies are an absolute baffle for you. If you ever attend a meeting, you have a very difficult time trying to understand what it is they are trying to accomplish.

You are probably most familiar with your local City Council 'cause you've dealt with them before, and that's something that's much more familiar to you, much more accessible to you, in terms of their evening meetings and regular meetings and so forth. And certainly an elected Councilman who you can call and have access to is a much more understandable process than some of these Regional agencies. Nevertheless, some of those agencies have some rather profound opportunities to deal with a subject like an airport and its growth, and its capital improvement programs and the effect that they have upon the community.

In the State, we have a group of agencies, the Division of Aeronautics, the Department of Health Resources, and so forth; they deal with the State side of the issue. And then the Federal alphabet of the FAA, EPA, HUD, and so forth. That just said a simple partnership, trying to deal with a subject this complex, winds up with its Board of Consultants and the partners themselves and their many aspects, in a raft of different kinds of agencies to try to deal with. Okay, can I have the light, please? Yeah, let's get the door, phew!

The representation on that Board of Control is kind of interesting, too. Clealy, it has a senior elected official from each of the partners, a Senior Supervisor from the County of San Mateo serves as the Vice-Chairman, and is John Ward; and the Senior Supervisor from the San Francisco County side is Supervisor Quenton Copp, who serves as Chairman. A member of the Airport Commission is on there, and a member of the County Airport Land Use Committee is also serving on that Board. So you've got sort of three of their side, and three from the other side. The Airport has three, and the County has three. And then, surprisingly enough, that Board is made up of two additional people: one staff person from each of the sides. I guess from the political standpoint, you really only then have six effective voting voices, it's not likely that a staff person would ever vote contrary to his principal.

The work itself? I guess from a technician's standpoint it's pretty straightforward stuff. It winds up with an inventory of what we think we have in the way of forecasts, and facilities on the airport side, and the land use zoning that exists, and the actual land uses that exist on the community side. And that's pretty straightforward stuff. We're into that now, and almost through it. It's surprising, though, when you try to do something as simple as that what you discover in the relationship between the cities, that sometimes the plan is under revision and has been for the last twenty years. The zoning ordinance hasn't quite caught up with the general plan in all respects; that the noise element of the general plan which is required by State law has been done, or was partially done, or has never been done. So we find all kinds of things like that. And what should be straightforward inventory then becomes a little complicated.

We just finished the initial part of work on forecasts. That was an interesting process, because we had before us from a ... an environmental impact statement which was the basis for the approval of a major capital improvement program of San Francisco International Airport to add a north terminal building. And that EIS had gone through the processes of describing projections for the future, and so on. We came along about, what, '74 with the EIS?--'45, somewhere in there--and we came along three years later, and we find similar things in terms of total numbers, and we find some dissimilar things in terms of some of the details, like the mix of the aircraft types.

Well, since that EIS was done, United Airlines has made a major purchase of a particular aircraft type, Boehing 767 That represents a certain kind of configuration that was different than we saw at the time we were looking at the 1974 period. That seat configuration, and the current activity that's going on in lower fares and discussion of deregulation and other kinds of things, and we wind up with some more operations than we were forecasting in the original EIS. And that's an interesting dilema. What do you do when you've got a capital improvement program that's underway, you've got an environs area that starts off, and you've got forecast differences?

We also, in that discussion of forecast, come across an interesting pholosophical difference. Traditionally, the public works kind of approach forecast says you make a projection of what you think may happen, you take a look at the facilities that you have at hand, and if you find a discrepancy between the capability of what you've got and what you think is coming, that indicates a need. You go out and you plan to construct or modify or whatever you need to do to accommodate that need. There's another viewpoint, however, that's expressed in our discussions of this particular subject that says, Hey, wait a minute; maybe you really ought to look, if we're really seriously concerned about EIS's, and EIR's and all that kind of thing, we ought to look first at those projections and say what will their impact be? "And if we find that we have some problems generated by those, and we can't find a way around those problems, then maybe we ought to discuss the ways in which we don't meet that projection. Now that's really a herecy in terms of, I guess, the traditionalists and the traditional approach. It is one that was discussed as we looked at the forecast. Interestingly enough, at the present time anyway, we are taking those in what we call baseline forecasts to simply be used to identify the impacts, what the impacts might be. No implication that they are, in any way, something that must be achieved.

The second item that came up in the discussion of forecasts is kind of interesting. As part of their over-all Regional airport study that had been done in the early '70's in the San Francisco Bay Area, the conclusion of that was that, based on the measures available at hand at that time, it looked as though there were going to be impacts from a large facility like San Francisco that could not be mitigated. Because of that, there ought to be some kind of diversion, if you will, of future growth to a companion airport across the Bay called Oakland. A very long and tough debate went on over that general subject. The conclusion, however, is the Regional Planning Agency, represented by ABAG and MTC, have a Regional policy that limits the size of San Francisco International Airport to 31,000,000 passengers a year. So for the first time, this forecast that we're using has this funny kind of shape; it goes up like this, begins to round off, and then all of a sudden flattens out, and goes flat off into the future. And that's kind of interesting. It's easy to draw the line. But the question is, What does that really signify in terms of actual accomplishment? What happens when the 31,000,001 passenger shows up at the gate, what do you do with that person? I guess I have a suggestion! No. Nonetheless, that is the Regional policy in that area, and that's the part of the baseline forecast that we're starting out with. Okay, that's kind of an interesting twist. We don't know quite where that leads us yet, and what will happen with it.

You have a similar situation here in the Los Angeles area. The policy expressed by the Department of Airports currently is that the capacity of LAX will be 40,000,000 annual passengers a year. And that number is generally, I believe, based around a ground access restraint, or constraint. But it's also clear that the runway systems and the air space system and so forth may, in fact, have a capacity that's greater than that. Same problem. San Francisco's Oakland-Bay Bridge had a capacity in the 50's of a certain number, and it had in the '60's a capacity of a certain number. We continually exceed it. It results in, of course, congestion and other kinds of problems. But somehow we have continued to force additional activity across that facility. And the question is, Why won't the same thing happen at these airports where these kinds of policies exist?

Anyway, that's simply kind of where we are on that Phase I. Phase I is really is the fun part, because that's where we start looking at, "What are the alternative ways we can try to deal with the impacts of that future activity?" What are the mitigation opportunities? What are the realistic chances that they would ever occur, or could be implemented? Who would do it? And who's going to decide that, and how do they make it work having decided that that's what ought to happen? We'll see what happens.

How do you get out of that circle of the FAA, and the CAB, and the airport owner, and the local county jurisdiction, and so forth? That'll be the fun part. Haven't done that, yet; that'll start in the dead of winter, and continue on into the Spring and into the Summer, and it's intended in November of '79 that this Joint Powers Board will attempt to reach an agreement, a concensus, upon what should happen. The process, the procedure that's being used tries to use the working paper. You start out with the facts, and put out a working paper; everybody has a chance to look at it. Technical review sessions, where we got a subject of substance like air quality, where we can invite EPA and the Air Pollution Control District in the area, together with the consultants, and the people in the Regional agencies and local government who have an interest in that subject, and to debate it around that working paper, and to be sure that the Joint Powers Board then hears the kind of response that comes back--we don't agree because, we think there are newer numbers or better numbers because, etc. And then the Board tires to deal with each of those as they begin to put those pieces together. We're using the Airport Land Use Commission, which is functioning as a local sounding board. They meet monthly. They meet in the evenings. It's an opportunity for the discussion about each of these papers to occur there. Their staff does a review, and the Board submits their viewpoint to the Joint Powers Board for comment. In other words, there is a tremendous amount of interaction--the planning staff, staffs of the individual cities, the technical review session which, by the way, includes the airline industry in both kinds of interests as well. And it is that process that I think, in summary, offers the handle--that for the first time, you've got a way into the beginning point of the decision processes as they occur. Whether that results in a satisfactory kind of resolution insofar as those people who are impacted in the community side are concerned we have yet to see.

In discussions in the City Council Meeting the other night in San Bruno where, I think, my skin resides in their trophy case, I had the opportunity to be, perhaps, the first one coming through there for a long time sort of representing a subject like the airport, and I was really the target for opportunity. I went in there to tell them, briefly, a fifteen minute spiel on what the project's about; walked out an hour and a half later with an action by the City Council to file suit against the City and county of San Francisco through their airport. And I suggested to the clients that maybe they didn't want to send me out there any more, if it's gonna stir up nine city legal actions against the whole project, or one of the principals of the project. But in that meeting, it's clear that that frustration is there, that the citizens in the community and the locally-elected officials, have gone around and around and around, and simply cannot find an adequate resolution, in their judgment, to their problem. Some in the past, and in other locations, and some in this instance, have gone the legal route on various aspects of the problem trying to find a resolution there, sometimes satisfactorily and sometimes not--even when winning not actually winning. In other instances, activity by the community has resulted in large land acquisitions made by the airport owner trying to mitigate. And the communities, in retrospect, might not find that the problem has been resolved for other than those that were in those immediate areas. But those outside those areas still have a noise problem, and there may be a disruption of several hundred households that are no longer there, and a corresponding disruption of the retail commercial portions of the community and its school system, and so on. So that kind of action may not have been satisfactory, either, even though it was an action.

So, the only handle in town is for many people, it may be these airport land use-type studies, environs-area studies. You should take a look at those, what they represent. The key to them, I believe, is that there's a good representation on the Board of Control from both sides of the issue. It seems to me to serve no purpose to have an airport by itself be the sponsor of such a study. It takes some kind of a combination of local government and the airport owner, parties directly affected that have the authority to act in these specific areas can be a party to such an effort. And I would offer that as a suggestion as something to look at. Thank you.

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Can General Aviation Airports Survive in Today's Environment

W. J. Critchfield, A.A.E., Airport Manager
Torrance, California

I had the honor of participating in the FAA Western Region Noise Symposium May 10th of this year. My presentation today is basically on the same theme, "Can General Avaition Airports Survive in Today's Environment?" The answer is still yes.

We have increased our knowledge and data on general aviation noise since May, and we have been faced with new...I won't call them threats...let's say new directions and interpretations, of how to approach solutions to the general aviation noise problem.

Torrance Airport, one of the busiest general aviation airports in the United States, is surviving in today's environment and dealing with these new interpretations.

The City of Torrance began aircraft noise abatement with the adoption of a noise ordinance which does three things: Set a noise limit on individual departing and arriving aircraft; established a departure curfew, allowing for business and emergency exemptions if reasonable criteria are met; and restricted the hours during which touch-and-go operations may be performed.

This ordinance is used as our basic education tool.

For the past year, our noise abatement team has monitored aircraft noise with a portable noise monitor. The team gathers informational items such as climb profile, general wind conditions, estimated percentage of gross weight, and the aircraft's registration number; notes the path of the aircraft, and insures that non-aircraft noises are not a factor. All of this information goes into an aircraft noise signature data bank and is recorded on the individual aircraft's data card. Should an aircraft exceed the noise limits, a notice is sent to the operator. When the operator voluntarily responds, his specific problem is discussed and an acceptable solution is agreed upon.

Before the ordinance became effective, the number of events which exceeded our selected noise limits was 1.3 aircraft per hour. This has been reduced to .6 aircraft per hour. We now have aircraft departure noise data on over 500 individudal aircraft, and our data bank no contains noise measurements on over 180 different makes and models of general aviation aircraft.

After carefully considering the impact of the departure curfew on interstate and intrastate commerce, the City of Torrance included provisions for business exemptions during the curfew hours. The permissible noise levels were also lowered during these hours. As a result, business aircraft which flew out of Torrance Airport before the restriction are continuing to do so. There has not been a detectable increase or decrease in the number of business departures. Not one single aircraft used for business has been denied the right to depart; and not one substantiated noise complaint has been received concerning these exempt departures.

The restrictions on touch-and-go operations have naturally impacted the flight school operators at Torrance Airport. After considerable analysis of the entire student training operation, which is about 40% of our total operations, a cooperative effort is under way with the flight schools. We feel that we can safely correct the problems of an excessively large traffic pattern and eventually adjust this restriction.

At this point you are porbably wondering how Torrance Airport became involved in all of this. Within and around the City of Torrance live some of the most sophisticated and intelligent citizens to be found anywhere. Many of these same citizens fly in and out of Torrance Airport. We are not "homeowners" or "pilots": We are people--people with different goals and pursuits and ideas, but with the same rights. The City of Torrance cares about its people, and because general aviation is a business element and pursuit of some of these people, the City cares about its airport--as well as it should.

To benefit from this citizen resources, the Torrance City Council appointed a Citizens' Advisory Committee on Aircraft Noise Abatement. This 9-member committee is composed of pilots, homeowners, and business representatives supplemented by staff and commission advisory members. This committee provides a forum for the free exchange of information about aircraft noise within the community.

Torrance Airport handles more flight operations a year than most big city air carrier airports. It pays itw own way and returns dollars to the City General Fund. It also provides millions of dollars in increased revenue for the businessses both within the City and in our neighboring cities.

As the City and the airport grew side by side, they grew closer together. While our solution to this problem may be unique, the problem itself certainly is not. Throughout this country, almost every one of the 11,000-plus airports faces this problem to some degree. At Torrance Airport, the problem became critical--not by Federal standards; by State standards; by County standards; but by our own City standards. The City of Torrance has always maintained the highest standards possible for all of its people; and it was decided that the Airport would not become an exception. Our goal was to eliminate the unnecessary noise involved in the daily operations of the Airport.

The work began--meetings, studies, public forums, deliberations, testing, analyzing, and finally action.

We have been strongly criticized, by our own people, and by just about everyone else involved in airport noise abatement (including some of you in this room), but in looking over the few options we had available, we chose this course of action because we cannot save general aviation by relying on Part 36 certification. Not only were many of the business and pleasure aircraft being flow today manufactured years ago, but FAR Part 36 certification of a general avaiation aircraft does not prevent a pilot from laying down 105 decibels of noise on people's homes at seven o'clock on Sunday morning.

The future is now for Torrance Airport and for general aviation. In 1976, of the 11,713 airports in this country, 11,083 were exclusive general aviation airports. Between January 1971 and December 1975, 987 airports closed. In 1976, 220 more airports were abandoned, and approximately the same number in 1977. General aviation now has a fleet of over 153,000 aircraft, compared to 2,600 air carrier aircraft. Each time a general aviation airport closes, the aircraft using that airports must find another airport to accept them. Torrance Airport cannot handle many more of these refugees. This slow death of general avaiation airports must be stopped, and the City of Torrance is dedicated to this. While some of our recent actions may seem to be in direct conflict with what I have just said, let me explain exactly what Torrance Airport, and most general aviation airports, face when confronted with a noise problem.

The FAA Aviation Noise Abatement Policy of November 18, 1976, the State of California's Department of Aeronautics Title 21 Noise Standards, the EPA's recommendations, and most other sources deal with jet air carrier operations. U.S. Department of Transportation estimates that over 6 million people are impacted by aircraft noise from the 23 major air carrier airports in the U.S. The Air Transport Association identifies an additional 9 airports as being "noise sensitive." If over 6 million people are impacted by these 24 airports, how many millions more are impacted by the remaining 11,000-plus airports? Only the most uninformed person would say that general aviation air craft do not make noise.

In addition to the sound level itself, the duration of these fly-overs sometimes exceeds 40 seconds. It is this duration factor that prompted the State of California to acknowledge single event measurements which take into consideration both the magnitude of the noise and the duration of the noise as heard above the community ambient noise level. We in Southern California who spend much of our leisure time outside can appreciate this type of measurement.

At most general aviation airports, the preferential runway concept cannot be used since there is only one runway, or, as at Torrance, two parallel runways. Proper land use planning and zoning unfortunately is too late to be a viable alternative for most general aviation airports. Building codes that require adequate soundproofing for future construction are fine, but what about the many existing buildings and homes? How do you soundproof backyards, and parks and beaches? The purchase of existing residential areas is neither financially feasbile or politically viable.

Higher glide slope angels offer little relief, as the specific problem area is in the departures, not the arrivals, of general aviation aircraft.

The FAA's integrated noise model does not contain adequate informaton on general aviation non-jet aircraft.

Everwhere we turned, we found that the solutions presented were for future airports or jet air carrier airports, or simply were not practical. We found that the wheels of noise abatement presently on the market wouldn't fit the cart of general aviation. So the City of Torrance set out

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to invent a wheel that would fit not only our own cart but could be adapted to the carts of almost every other general aviation airport.

It is human nature ot scoff at untried concepts, so we don't mind when people scoff at us. We look at the results achieved. I will briefly summarize what we have achieved in a year.

- We have convinced most of our flight schools that the future of student training at the Airport depends upon them. We are now working together to include noise abatement techniques in their training programs.

- We have been in and out of court with the local pilots' association, and they are now actively involved in a public relations effort to improve the image of the Airport. The pilots' association is actively involved in the Citizen's Advisory Committtee on Aircraft Noise and is exploring with us the potential for after market modifictions of aircraft exhaust to decrease noise.

- As I mentioned, the Citizens' Advisory Committee on Aircraft Noise provides a forum to exchange information and ideas. Its members are also charged with the responsibility to return and share their information with the membership of their constituent groups. This greatly increases the ability to exchange information.

- We have worked with over 40 different pilots in an aircraft evaluation program in which various noise abatement techniques are monitored. These test runs are voluntary, with the expenses borne by the pilots themselves. They are conducted within the parameters of the Aircraft operator's Manual in a manner accepted as safe by the pilots. The results of this program have shown noise reductions ranging from 9 to 22 decibels. These numbers are quite encouraging when you consider that adecrease of 10 decibels reduces the noise by 50%.

- We have examined our training traffic pattern and found that our eventual goal of pulling the pattern off of the residential areas will reduce the noise of these aircraft by 22 to 67 percent.

- We have developed aprocedure in the form of a Jeppesen Manual insert and are in the pocess of distributing 27,000 of these inserts to pilots in the osuthwestern and western United States. This insert clearly describes noise abatement procedures and limitations and has a photograph of the Airport and its environs clearly defining the noise sensitive areas.

- We are currently installing a noise monitoring system equal in size to many major airports, with more advanced technology incorporated into it. Very few sounds in the world can duplicate that of a jet aircraft, but you would be amazed how many sounds are similar to that of a general aviation aircraft, so to distinguish between aircraft and community noise, the City of Torrance has designed a highly sophisticated system. While the State did provide extra dollars, we find ourselves in the position of having to come up with an additional 40 to 50 percent in order to accomplish our goals. None of this money, either State or City, to date, is for enforcement. It has all been allocated for the education program. It was only natural that the expenditure of this sum of money was objected to by the aviation community. They felt that the money should be spent more in the interest of the users. But let me give you an analogy. Torrance Airport covers some 520 acres of property. Today's cost of installing a chain link security fence around the Airport is in excess of $130,00. This is alot of money to spend just because there are a few people who would do the Airport harm if there were no fence. Harm can come to the Airport from restrictions and closures as well, and the noise monitor will act as a fence and protect our Airport. Our system will identify those areas in which there is a noise problem. It will alsoidentify those areas of the community where there is no problem. Subjective and emotional rhetoric will be replaced by scientific data. The City of Torrance not only is picking up the tab for the additional system costs, but it has also committed itself to an education program that will cost in excess of $100,000 a year. The City cares about its community. about its Airport and about general aviation. We are convinced that, despite the obstacles I have mentioned, we are well down the road towards inventing a whell that can be shared by all of general aviation. We have programs that any general aviation airport can use. We have concepts that can work almost anywhere. At the FAA Noise Symposium in May, we asked for assistance and cooperation in several areas.

We asked the FAA to encourage the field level of Air Traffic Control to work with us on our traffic pattern problem. Not by correspondence, but by actual person-to-person contact at our Airport.

The FAA has been responsive to this request. The efforts of Air Traffic at the local tower level and at the regional level are positive and constructive in helping us to deal with noise abatement.

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We asked the FAA to encourage the Flight Standards Branch to have their examiners talk with us and to our flight school instructors and owners, and to discuss the noise problems at our Airport. We have initiatied a program with Flight Standards' cooperation which looks very promising.

From these two concepts, we asked the FAA to give our joint findings to the Academy in Oklahoma City and let them design safe noise abatement techniques into every flight school syllabus as a requirement. Noise abatement is not the nemesis of safety in the world of general aviation. Safety should not be compromised; nor should it be used as a crutch by those pilots who accept a standard that is less than professional.

We asked the State and Federal legislatures--and in particular Congressman Anderson and his committee--to continue to address the problem of noise abatement, especially in the area of general aviation. The Anderson Bill will, when it become law, move a solution to the jet noise problem closer to reality. Congressman Anderson and his committee will then be free to deal with the general aviation noise issue.

We asked the media to begin to show the gains and results, of not only our efforts, but of the efforts of everyone involved in this issue. The impact of the media upon the population of this country has long been established. While we realize that quiet general aviation airplanes do not make headlines, as do noise air carrier airplanes, we firmly believe that there is an audience of millions out there who want to hear how we are dealing positively with their noise impact problems. Unfortunately, they are still waiting to hear.

We asked the Environmental Protection Agency to work with us in the area of analysis of social problems and public reactions and responses in the communities surrounding general aviation airports. The bottom line in noise abatement is not a decibel reading: It is impact of unnecessary noise on the daily lives of residents of these areas. We have received positive response from EPA under their Quiet Communities Program.

We asked the aircraft owners and pilots association to not only continue their trend towards acceptance of noise abatement, but to reallocate resources from fighting the program to helping solve the problems. Gone forever in metropolitan areas are the days of goggles and the silk scarf. The AOPA has been positive in their response, cooperating by informing their members of critical noise problems, areas and issues, by encouraging members' participation and response at the local level on local noise problems.

We asked the General Aviation Manufacturers Association to work closely with us in the sharing of noise data, so that their engineers might more quickly achieve those technological improvements which they are already pursuing. We asked you to recognize that quieter aircarft can be marketed to your advantage; and we specifically asked those manufacturers who already endorsed the concept of quiet general avaiation aircraft to publish noise emission figures, just as they now publish other perofmrance information. This has produced a positive response from Cessna and Beech.

We asked private enterprise to investigate the after-market retrofit possibilities in power plan noise suppression, especially in the area of propeller RPM reduction, since over 80% of the noise is generated from the propeller. While I am sure our request did not precipitate it, the new "bent tip" propeller is the type of innovative approach we are all looking forward to.

Of all the help we asked for, we needed the help of the individual pilot more than anyone else, for ultimately, it is the individual contribution of each and every general aviation pilot that will allow general aviation to grow and prosper. I am ahppy to say that the individual pilots, when they understand what we are faced with are cooperative and show a genuine concern for helping to solve the problem. Much of our educational effort is now directed to reaching these individual pilots.

We asked for a lot then, and we ask for your continued efforts. Now we are going to ask again, but this time we are going to ask for your support of just one thing--a uniform single event noise measurement that is fair to the community, while allowing the general aviation air transportation system to continue operating with the least number of restrictions.

First let's address the problem. We know that for general aviation aircraft, the single widest variable in the performance of the aircraft is the pilot. It is the pilot, in his judgment, that can reduce the propeller RPM. It is the pilot that can choose the angle and rate of climb. It the pilot, and the pilot alone, that can make the noise of the airplane he or she is operating acceptable to those below on the ground.

Then, why are we blaming the aircraft for making noise, when the pilot is the one responsible for how much noise the aircraft does or doesn't make? Why are airport proprietors encouraged by the Federal government to ban certain types of airplanes from our airports? Why should the majority of Bonanza pilots at Torrance, who fly their aircraft properly, be penalized for the minority who do not? Why are we regressing? This county has, for the last 15 years, been trying to end discrimination because of color, or sex, or religious belief, or ethnic background, but in the area of aircraft noise, the Federal government is advocating a policy of class discrimination. Simply because one pilot cannot fly his airplane properly, the airport proprietor may be forced to ban all other aircraft of that type from his airport. The entire concept of Part 36 for general aviation aircraft is unfair. It is not in the best interests of any of you here today. We firmly believe that the uniform single event noise measurement will benefit all of us, but for Torrance to believe it isnot engough, so let me run down the list of interested parties and explain how we see the single event measurement, as opposed to Part 36 based aircraft type bans, is to your benefit.

For the FAA, Part 36 is vital for the control and reduction of commercial jet noise. We support this program. The largest fleet of aircraft the FAA is responsible for is not the airline fleet, but the general aviation aircraft fleet. Unless the FAA wants the burden of trying to reallocate air space requirements caused by type ban actions from a potential eleven thousand airports impacting perhaps half of the general aviaation fleet, then the FAA must re-evaluate its position on single event monitoring. Give the airport proprietors, and the pilots and the aircraft mnaufacturers a more realistic grasp on and approach to noise control.

For the aircraft owners and pilots association, whose lobbying efforts have maintained the general avaiation air transportation system's growth through the years, we suggest the adoption of a uniform single event measurement is the single most important concept you face. Noise abatement is here to stay, and because of noise abatement, airports will survive. But if you want your membership to survive, type ban actions must be replaced by uniform single event monitoring to identify and deal with specific offending pilots/aircraft.

For the General Aviation Manufacturers Association, Part 36 represents a state-of-the-art goal that must be met in order to manufacture an aircraft for sale. Your bottom line is profit, and profit comes from sales, and it is going to be difficult for you to convince a prospective buyer that he should buy your aircraft when he already knows that your aircraft has been type banned at his local airport, even though Part 36 requirements have been met. Type banning at Torrance Airport would eliminate a significant part of our fleet. That's a big part of your sales.

For the Environmental Protection Agency, Part 36 for general aviation aircraft does not offer the communities relief from noise. Aircraft do not depart from 1,000 feet: They depart from the surface of the Airport, and most airports have residential areas between brake release and gaining 1,000 feet. You must remember that in general aviation it is the pilot, not the airplane, that determines the amount of noise reaching the ground.

For pilots, the day that Torrance Airport is forced to type ban aircraft is the day that many of you will have to land somewhere else, and if you are based at our Airport you will be among an estimated four hundred and fifty pilots that will sooner or later have to fine another airport to base your aircraft. This is unfair for the vast majority of you who fly your airplanes as quietly as possible to suffer because a minotirty of pilots do not fly quietly.

The Part 36 type bans the airport proprietors will be forced to use will probably cause the loss of millions of dollars in revenue, and closing some of the existing airports.

For the residents on the ground, Part 36 for general avaiation aircraft, will certainly get rid of the aircraft that cannot meet the Federal requirements, but as you realize by now, the pilot of a Part 36 certificated aircraft can cause much more unnecessary noise than is acceptable. Unless the airport proprietor elects to ban all of the aircraft of that type, the homeowner and resident will have to live with the noise.

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We all stand to lose from a type ban based on Part 36 certification, but all of us stand to gain from a uniform single event measurement. For the sake of each of our individual interests, and for the sake of general aviation as an element of the National Air Transportation Syste, an industry that is vital to all of us, we urge you if you agree to make known to yourlocal, State and Federal agencies and officials involved, and ask for adoption of a uniform single event measurement to be added to the FAA Aviation Noise Abatement Policy.

General aviation can survive in today's, and tommorrow's environment, but in order to do so it must be responsive, positive, and effective. It must identify, pinpoint and deal with specific noise problems. General aviation cannot afford to rely on a generalized shotgun solution to the problem of aircraft noise. Too many of the good guys will become victims of the effort to reduce unnecessary aircraft noise produced by the bad guys.

Thank you.

US: I'd like to address this question to Leon Dougherty; is he still here? There he is. Okay: I work for the St. Louis Airport Authority, which operates Lambert-St. Louis International Airport, and we have a particular thorny problem right now in Suburban St. Charles, which is just to the west of the main east-west runway. And the problem that I've been endowned with I've got to solve for that community, and I'm looking for some solutions here, particularly from your expertise. I haven't been getting any from Kansas City yet. And we have a problem where there is a subdivision on the farthest western reaches of St. Charles; it's rather high, it's about--well, for St. Louis, it's about 650' above sea level, the highest point around. And it's just about a mile to the west of the outer marker of that runway. And I've been told by the citizens group--the leader of the citizens group--in fact, he's taken me out there, and I've spent about three hours watchin' the planes--He told me that, in particular, the planes were coming in at all angles and all altitudes, and were, in fact, not on the glide slope, were not approaching the outer marker straight on, but coming in from an angle, and producing a lot of noise that he thought was unwarranted. Now, he's a former Air Force pilot. I'm not sure what experience he's had, but he seems to have a reasonable problem, because when I was there, in fact, they were coming in at all angles and at all altitudes. I was wondering what I could do to impress on the FAA the seriousness of this situation, because as the gentleman who just spoke before me--or two gentlemen before me over here, I believe--was saying that the suicidal tendencies of this group represent people who either have hearing problems or otherwise are upset. They are becomming irrational about this, and I'm being caught in the middle, so I need to do something quickly.

LC Doughtery: Well, your problem is not unique to start with. In fact, I was discussing at lunch a similar problem on these departures at Oakland, where rising terraine causes aircraft to cross the ground at a much lower altitude than you would expect based on the climb rate. The reason for the aircraft approaching the outer marker at various angles is probably that the FAA there has purposely spread the noise. Beyond the outer marker, except in instrument conditions, it's not necessary to be on that path until you cross the outer marker. Not being able to speak for the Central Region, a problem in this Region under the policies that I have instituted, I would say to you to get the communities involved--St. Charles, St. Louis, and I think there's a couple of others that are involved in that--and work with the Chief at the tower to determine what paths should be used to provide the best noise situation for that area. Now that's what I have asked all of our Facility Chiefs in this Region to do is to work with the local communities, provide the technical expertise as to what can be done, and then go to the communities and say, here are the options; which option do you, as a community, want to be instituted? And I think you would find the same kind of cooperation from the St. Louis people if it's approached in that manner. But the Facilities Chiefs in that area would be the ones to start with locally.

US: Is the FAA really going to take over the enforcement of them?

LCD: I'll answer the last part first. Enforcement, no. And I would hope that you in the local communities would not want the Federal government stepping in and enforcing local ordinances. That's the first step to the Federal government imposing local ordinances. And our system--that scares me, as a citizen of the United States. Our function is not enforcement of local ordinances. Our function is not even to provide, from the controller's viewpoint, information on specific aircraft for enforcement. That is an added work load that we're not staffed to be able to do. Local communities can come in and obtain, by either being in the tower, or for those facilities with automated equipment, an after-the-fact tape which then you would have to have processed to identify specific aircraft.

As far as what Torrance is doing, for the most part we are supportive of Torrance. We think what they are doing is going to end up promoting the life of general aviation. They are doing it today as an education program. If they get into an enforcement action, and the people they are enforcing it against come to the FAA and say they are causing them to fly that aircraft in an unsafe condition, we may find ourselves in the middle whether we want to be or not. We are trying to help Torrance in the education program of the pilots, such that noise can be reduced by the way you fly the airplane. And generally, as Bill said, it is a safer way of flying because you end up with more altitude underneath you to play with if you do have any kind of an emergency to go with. Legally, we are auguing with Torrence--I shouldn't say arguing, we are looking at Torrence on the single event measurement. We're saying that using single event is discriminatory against an individual, where Bill's answer back to us is, as he stated, use of other than single event discriminates against the type of aircraft. But that's in our Legal Department, and it's going on it that way. And at this point, we are supporting what Bill's doing in many ways, looking for that as at least an avenue of approach in this area.

Ken Warren, Long Beach: Mr. Dougherty this morning mentioned something about in a lot of our efforts we just tend to move the noise around, and reminded me of the general aviation noise abatement policies and efforts we make. And I'd like to ask Mr. Critchfield, whose city I admire so much for years--my city, we thought that we can ignore the problem maybe it'll go away, and we finally got an Airport Manager that's willing to meet with people and face the problem. My question is, from your experience thus far, have you seen any of this moving the noise problems to other parts of your town, or have you noticed any airplanes literally going somewhere else, of the noisy variety?

W.J. Critchfield: We haven't been intent on noving the noise problem someplace else. We've been trying to confine the noise inside the, at least, the boundaries of the airport, or the industrial-medical area that surrounds the airport. As far as an incident of aircraft that don't meet our noise level going someplace else, we've had several threats, but nobody has complied, dogonit. We've got a couple that we would like to see do that, because we don't think that they can meet the criteria. On the other hand, if they can modify their techniques, or the characteristics of the aircraft, we have no problem with them staying at Torrance.

But to answer your first question, no. We haven't tried to move air traffic and the problem someplace else, because if you'll look at a copy of the Jepson insert, we don't have any place to move it, other than concentrating the noise on some other part of the community by removing it from one part at the expense of another, and concentrating it.

KW: I know you wouldn't try to do it, but have you had any incidents of complaints where it seemed like that's happening, inadvertently or not ...? ... by makin' a guy be higher here, he's usin' more power ... because of this latest complaint, instead of somebody else.

W.J.C.: No. You know, if we had our druthers, and if traffic is such that they could comply with our advisory in the Jepson insert, I think, you know--it would--and it has, to a certain traffic has to try to sort these traffic conflicts out, and they have resulted in complaints in certain areas, periodically, or during one period of the day, or a certain week-end, or a certain day. And we've been able to identify and trace back the noise problem in that particular area as a result of traffic conflicts which the tower is vectering aircraft or holding aircraft, so that they can straighten out the traffic pattern, and restructure the traffic pattern. We've had our--you know, I won't say isolated--we've had incidents of this occurring. And it would appear to people that we're moving the noise over their community, but that's not really the case, because we didn't initiate it. And we agree with the tower's actions in solving a safety problem, an air traffic movement problem. Does that answer your question?

KW: Yes, it does.

W.J.C: We have a little document right here. You can see that it's punched down this border...a navigation aide, not in the sense of an electronic, but it's an aid for a pilot, he buys this ... the Jepson Company ... Every time a plate or an approach area is revised by the FAA, they publish a new plate. It contains a photograph. As you can see, it's shaded in red. It shows the major highways. The red area represents a noise sensitive area. Along the base, it shows the accepted flight profile for departures. On the back is a vicinity map showing the relationship of Torrance Airport to other airports in the area. It gives our restrictions, departure curfew 2300 to zero 6:30 daily daily, excepting exemptions under certain conditions touch-and-go, stop-and-go limitations, and so forth. To the right, in this area here, it gives noise abatement arrival and departure pattern procedures for DFR ... and for fixed-wing only, which we have developed in conjunction with the FAA air traffic control tower at Torrance Airport. And we'll try to have--I think we can have some here tomorrow to hand out, right?

US: My question related to the same thing. Can I frame mine?, and maybe we can ask them both at the same time. Yesterday, I received an Aviation Industry Trade magazine that had a discussion of Boeing's new aircraft, and also in an active way presented a proposal by Boeing apparently to re-engine old airplanes. One of the bugaboos in all this Part 36 and things is what's gonna happen to all these old airplanes; and as a representative of both Douglas specifically, and the industry in general, do you think--what do you think's going to happen? And is Douglas actively pursuing things related to the old DC9's and the DC8's, in response to his question?

LCD: I'm not sure you're asking the right person. I'm rather opinionated on this particular question. My personal feeling is that the SAM retrofit of the old aircraft is a very meaningless endeavor in terms of accomplishing any meaningful benefits to the airport neighbors. As a matter of fact, our DC9's coming off the line today include that treatment that would be retrofitted, and they make more noise than the DC9's that are out there in the field today without that retrofit. With respect to the re-engining, the streched versions of the DC8, which were the latest versions and are the most efficient versions, have so much valuable life left in them that it is quite possible that there will be a re-engining with a higher by-pass ratio engine for those aircraft. And if they are re-engined as opposed to putting a little fuz in the ..., then they, in fact, go into the same general noise category as the new aircraft powered by high by-pass ratio engines. And I would--my guess would be that the--most of the 707's and most of the DC8's, the short-bodied versions, the old standard version, will be retired. And that the stretched DC8's, and maybe some of the very newer 707's, may be re-engined. In the case of the two and three-engine aircraft, it simply is not practical to re-engine those aircraft. So they will be equipped with the SAM suppressor simply because there's nothing else that can be done. That's my general assessment.

US: Question inaudible

LCD: I'm afraid I can't give you the kind of answer I would like. I will say yes, we do look at the lower frequency. We try--in fact, we would like nothing better than to understand the noise problem efficiently, so that we could, in fact, design the airplane to try to ensure minimum annoyance or disturbance, or if there are other health effects, to minimize those. However, the certification requirement is such a driving force that we have little choice but to optimize the aircraft in terms of the certification requirement. So if the certification requirement does not reflect the true community situation, then we may be designing somewhat, if you will, in the wrong direction. And we certainly would agree that, with all due respect again to the FAA, that they've made tremendous efforts to try to improve the certification requirement, and they're still working on it. But it still has many weaknesses, and it leaves much to be desired.

And it's quite easy for some problems, such as the one you mentioned, to slip through the cracks a little bit.

US: This problem is rather complicated--at least, it's complicated with me. ... the run-around from one agency to another. And then we asked the FAA if they were going to help and have somebody enforce the local ordinances; and he said no, he didn't want to get into that. It seems like, with me, that that is a very critical kind of problem, because that tends to make local agencies not want to enforce anything ... I think, because they are afraid to go to Court, because the Court will rely upon the Federal precidence in deciding the transportaiton cases, and that doesn't help the local ... I guess what I'm asking ... is there somebody missing from these kinds of meetings, like the judicial system that does not understand ... This is just a statement ... It confuses the understanding ... the Federal government saying well, ... you don't want us running your local area. I can't ask the question, I just have a feeling about that.

LCD: Maybe the point is, who's responsible ... ... myself, is to pass the responsibility around; nobody wants it, but nobody seems to want any one group to actually have it, if you can track them down. I think the FAA is closest to having the responsibility ...

Well, the Supreme Court, to me, has answered your question, when they said it's the local airport operator's responsibility. Now, the airport operator, in most cases or many cases, is the local community. And I guess I'm kind of a States' rights, local rights advocate, and I wouldn't want the FBI enforcing the 55 mile an hour speed limit, for example. But the Courts is where it would have to be answered--

US: That is all very well; but in the majority of the transportation cases which have eventually reached the Court, the local agency has lost, and that is a historical precedent going all the way back. And, I can't see any difference in coming down ...

LCD: I think this noise one will be different. I wouldn't argue with you on the history of it, but it's true.

US: I'd like to respond for the local community. I agree with Mr. Dougherty, the Suppreme Court has given us a decision; but it's a very broad, brush-type decision. I think, in our case, we're willing to make it cut and dry. And I believe this is what the juris--the judicial system of this country is all about; you make it cut and dry, and you win a few and you lose a few. But I think we're gonna win more in this one than we're gonna lose, and I think it'll be to all our benefits. So it's sort of a case of who's gonna step forward first. And, you know, I got a lot o' tomatoes because I stepped forward.

US: I'd like to follow on that, Mr. Dougherty. And I'd like to say I have the utmost respect for your staying here and taking the heat on a lot of these questions here. I--further on that question, I don't see the California Highway Patrol up there, or the City Police Department of Torrance, or anywhere else in the air space.

And I'm thinking of the example of my neighbor who had his license revoked for sixty days for flying low over Stenson Beach or something. Then it was changed to thirty days. Who actually does that? And is the question here really the fact that it's a local regulation as opposed to a Federal regulation? In other words, if we came up with the same idea--that is, not we, but say, the FAA in their authority to regulate air space came up with exactly the same idea that the local regulation came up with? Would there then be an enforcement problem?

LCD: Let me comment first on your friend that had his license suspended. He probably had his license suspended for reckless and careless operation. Flying within a thousand feet or five hundred feet of a populated area is against the Federal regulation. So we would be after him, just as we were after the people who took off at Torrance at night. While they were against Bill's curfew, they were also against our regulation for reckless flying for flying at night without lights.

Yes, if--I don't think at the present time we would have the authority to pass a regulation such as what Torrance has passed. If Congress in their wisdom either set such a statute, or gave us--directed us--to get involved in that area, then we would become the enforcing agency as well. And I'm again--I personally don't think that is the way our system in this country ought to work. I see the noise as unique to each airport and each locality. When you start putting a National regulation on it, I'm afraid we would do more damage than we would do good.

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US: There must be differences at different airports ...

LCD: Yeah, yes. But there is a regulation where each airport with air carrier operations must meet certain security specifications. Now, we do not provide the security people. We do not provide security systems. We do inspect those systems to make sure they meet a specific regulation. Yes?

US: Mr. Critchfield. How long has your ordinance been in effect? Have you had many prosecutions under it? And in drafting up the points that you did, did you get the help that you wanted from the FAA tower?

WJC: Our ordinance became effective Thanksgiving Day, 1977. We have not issued any citations or prosecuted, because we got direction that we would go into an educational program. We've been reasonably successful with that educational program. As far as drafting the ordinance and putting together to legislation, yes, we got cooperation from the FAA. We did not get direct input from them, because that's not their business, as Mr. Dougherty said. But where we had questions of procedures or regulations, we got cooperation from them. We were advised that they didn't agree with us on the single event, but that's as far as it goes. But I wouldn't say we were arguing, we're discussing heatedly. Does that answer your question?

LCD: We're approaching about an hour of discussion--about two or three more questions, and then I'll have another such discussion period tomorrow. The gentleman in the back?

US: Question for Mr. Dougherty. If you think that the Federal government shouldn't poke its nose into local affairs, ... would you say that about JFK and the Concord jet in New York? ...

LCD: There, the issue again became like it is at Santa Monica, a case of discrimination, or a case of undue impact upon interstate commerce. And that--the two areas--there's three areas that we will get involved with a local noise plan, and those are: first, safety, it cannot impact safety; second, it cannot be discriminatory, and this is one of the first things we argue with at Santa Monica; and third, it cannot have undue impact on interstate commerce. Now, at the present time, those are our instructions from Congress, and there's a lot of question right now as to what constitutes undue impact on interstate commerce. And we're looking at each case individually, and the first one that gets into the Court we'll get an answer.

At this time, we've had some general answers, just as the one on the Supreme Court that C. and I talked about. The answers have been general, and subject to interpretation on specific cases. And the Concord was interstate, international commerce, and also got into some international treaty agreements which got beyond the FAA in one part of it.

US: Would it be unfair--I know it is--to suggest that the FAA will enforce regulations ... if it wishes, and will not, and ... if it doesn't want to?

LCD: I would hope not, but I wouldn't want to say that we wouldn't. Local ordinances we would have no authority to enforce. So if we tried to enforce--let's use Torrance because most of you here are most familiar with it because of Bill's discussion of it--say someone violates the curfew or the touch-and-go ordinance at Torrance. If we tried to take an enforcement action on that, I'm sure that it would be--if the person that we were enforcing it against took us to Court, we would be thrown out immediately, because we have no authority on that ordinance. If they didn't take us to Court, we might get away with it; yes.

Even so, it might go on for years.

US: And I want to say first of all that I'm not antagonistic to you, I just sound that way. And I really do appreciate the way that you have stayed here to field these questions. But please understand that I'm talking from frustration, and that makes me appear maybe more angry than I really am. I want to go back to Santa Monica's case again for a minute. We've had an ordinance that attempted to regulate noise to both a noise level and a pure jet ban since the early '70's. The FAA has never accepted that, and I'll give you that. Although in the policy and procedure book for noise, we are listed in your book as one of the ways in which communities are attempting to solve this problem. What is frustrating to us is that, when we work through a process of political action on the local front through our own council, through our own people, through the airport, and having some input from FAA which basically is one of saying you can't do that, but anyhow they have been, at least, involved--to now, six years later, find ourselves in Court, with the FAA taking the attitude that whatever you're doing is wrong. And then

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on the other hand coming right back immediately and saying but whatever else happens we're not goint to enforce it. And that has to be one of the most frustrating things. You can't tell us we can't do anything, if you're not willing to do something yourself.

LCD: I have to agree with you on the enforcement and the frustration. And as a comment about your antagonism, I do not consider group antagonistic, any one of you. We're here to look for solutions, and have an open discussion. And if I can't get a frank and candid statement from you, you're not gonna get one back from me. And you're frustrations have got to be included in that.

I am not that familiar with the Santa Monica case. It developed, as you say, over a long period of time, and I see contradictions within what we have done as an agency at different locations. And my legal people tell me there's differences. If I have to answer those differences, I've got the same frustrations you've got. I don't understand those little gray areas that they're telling me there's a difference.

San Diego, I think, is a good example. We have told San Diego we do not agree with a curfew. San Diego then, under the State direction, was expanding the curfew. We in the Region and Washington and in the Department looked at that, and we're goint to again oppose the extension on undue impact on interstate commerce. We did a little study, and found that yes, there were three air carrier flights that would be impacted. Well, half of us in the agency were saying that's undue impact, and part were saying it was not. And finally, we agreed we would not comment, and primarily because at the time, the airlines were not willing to stand up and say, We are being impacted. So we're left settin' out on a limb saying there's impact, and cuttin' the saw with it. And then when we said we wouldn't comment, then the airlines step in and go to Court, and say there is impact. So I've got some frustrations in it, too ... But I think we're all learning, we're trying. I look at Torrance as the one out in front that's going to get bloodied, probably in a Court case. But we need those kind of answers to determine what we can and what we can't; and hopefully, we can avoid the Santa Monica situation by better communications all the way around before we go to Court. And I apoligize for the agency that, at one level, we're agreeing with you, and when it broadens out to another level then we take you to Court.

I hope that we can avoid that in the furture as anything is developing, to make sure our entire agency, not just one little element like the Western Region, is in agreement with it.

WCM: A couple more questions.

US: My question is for Mr. Dougherty, and relates to the problem of safety. Now, we heard so much that the Federal government, in this case the FAA, may come into the act because of the safety consideration; then they can act. Well, the problem arises: Who determines what is safe and what is unsafe? I talk with the pilots, and they say whatever they do--if they buzz your house and wake you up, they did it because it was safe to do. He did it because otherwise it would be unsafe. Now, here is the guy sitting in the cockpit over there who tells that he did it, but he did it for safety reasons. And what do you do about it? Nothing, because it's for safety reasons. So, when you strike--there is no--the pilot is like the Captain of the ship, he has all the rights, and he determines what's safe and unsafe. But he could be subjective, and he could be mischievous.

Would you use the microphone so people can hear you?

Maybe if I stand up.

US: Something about local communities versus the airline industry solving noise problems, but I couldn't get enough of it to write it down.

LCD: Okay, I think I mislead you in one context. There's two parts. One is the noise generation, which is the industry and the FAA working together. The other part is what do we do with the existing noise, and the noise that's always going to be with us to some extent? That is where I say the community has got to be a participant in where the noise is put. But as far as reducing it, total noise abatement, now; the community--that is not the community's responsibility, that is ours and the industry's.

Inaudible question.

Noise shifting is not an abatement procedure. Noise shifting is a sharing procedure. And I will not use the word abatement with noise distribution. It is not.

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LCD: Bill, can I disagree with the concept that the community has no role. I would like to go back kind of to the point that says when the community has reacted strongly enough that they want to talk about things like curfews and restrictions in the initial operations, and limitations at aircraft factories, that begins to give the signal to the industry that there's a cost associated with no ... And that's the reason you can start thinking about re-engining prior to the normal economic period that would say that engine has still got life in it and it's too early so we go for SAM, because that's the economical way--maybe that's the economical way. So the community has a responsibility for giving those signals, I think. And until they do, the industry doesn't have it. And they're looking at economics strictly as the air ... engine economics ... structuring and utilization. And when they have to look at an aircraft that can't get more than nine hours a day utilization because of the windows in the route structure over time zones. Will, that has a tremendous impact on the ... of the industry, and opens the opportunity to consider other economic alternatives. The community does have a responsibility for giving signals.

And, of course, community signals are what resulted in the Anderson Bill last Thursday. And it will result--it was community involvement that resulted in the Far 36 initially, resulted in the Anderson Bill, and resulted in what Bill is doing at Torrance. So the pressure has got to come, yes, from the community. What I mean when I say that the industry and such are the ones that have to develop the answers--yeah, the pressure's got to come from you. Our system in this country is a reactionary system, and we react in levels determined by the pressure put on us. And you put pressure on us through your Congressmen, through your elected officials, through your organizations.

WCM: Before I bring this club to a close, ... one last question.

US: I'd like to go back to your presentation, Dr. Meecham. Concurring with what you implied, and Mr. McPike implied in some aspects of this, additional research is needed. And I was wondering the motivation for your study, was it your own idea, or did some agency or somebody start this? Do you consider your study complete? And I'm thinking of--you mentioned the over-water landings. Did you get into any analysis of whether the specific impacted area changed after that started?

WCM: First, there was no agency support for what we did. Whatever support there was came from the State of California and this University. Second, concerning your last question, is there more to be done: There is. There are all sorts of things that have yet to be done, which could be done if there were support.

US: Well, if you aren't doing more, can you tell from what you--from the arithmetic-type analysis that you've done whether the over-water landings reduced the impacts in a specific area rather than just an area ...

WCM: The impact--if we could convince the FAA and the commercial airline companies with behind them to do it the impact would be virtually nill on the most areas. The landings and the take-offs are far enough away from the people we're talking about in this study so the noise would certainly not be oppressive, though noticeable.

US: I was speaking of the past over-water landings. Have they been considered in your study? Did they change it a little bit?

WCM: Well, certainly one thing that happened was that the people could sleep for six and a half hours, assuming they'd drop off immediately after the last plane. We have checked to see the response of the people in those areas; they were overwhelmingly in favor of that change. There are some difficulties now which are arising in areas of west Los Angeles because the planes are skirting procedures and flying low in the middle of the night ... And there have been complaints about that. But low flying is not necessary. All they need do is keep between fifteen and twenty thousand feet before they make their descent at night.

LCD: If I could just comment quickly on part of your question as well. I would hope that, because of what you and Noel Jones have done, that we can get, not the FAA, but HEW or EPA or somebody--if we fund the study, and it comes out saying you're wrong, well it was aviation interest. Even if I think we can be objective, I don't think it would have the objectivity. So I'm going to try to encourage that their be follow-ups done, but not be FAA. I think the objectivity would be lost.

WCM: I think you can find many citizens who will agree with what you're saying.

LCD: Yes. And we are looking at the problem of over ocean approaches which you mentioned of the west, and the low altitude swinging off course, and some of those things. There's a continuous study going on of Los Angeles and of the Bay area and several other areas. But the present problem with over-water 24 hours a day, the capacity of that system based on safety regulations and separation is 35 operations an hour. There's 1600 operations a day at Los Angeles; 35 an hour only allows you 840. So at the end of 24 hours, we get 760 airplanes backed up some place. But we may find a way. We're gonna look.

WCM: It is done at night, why can't we at least extend the hours.

LCD: Well, we're running into a problem right now at night. The delays have built up to over an hour about 1 a.m. because the amount of traffic has exceeded 35 flights.

SECOND DAY OF AIRCRAFT NOISE CONFERENCE

Airport Noise Abatement Planning: Putting it all Together

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How this title was arrived at is a story in itself - but to do my best, I will talk about Preventative Planning, Remedial Planning and Local options or actions that can be taken to alleviate airport noise.

First, however, I would like to use some of my time to show the film Jet Roar, which I believe gives the Agency view of the avaiation noise problem...............................
The film is considered hard-hitting, although some say not hard enough to move people or get action. It was produced through the effort of the late Bob Randall, who headed the EPA Airport Noise Program, and who had worked for the FAA and industry.

The statutory role of the Environmental Protection Agency is a limited one, especially when compared to the Federal Aviation Administration which has primary responsibility for operating the National Air Transportation System. The Noise Control Act of 1972 requires EPA to provide advice and make recommendations to the FAA; it also allows the EPA to provide technical assistance to State and local governments that request it and to provide information to the public. This is an important but very limited role. EPA can and should create a climate for innovative solutions to vexing airport problems. Most of the easy solutions, in Southern California at least, have largely been implemented. I believe we must continue to increase public awareness of the problem and promote innovative solutions if the future operation of our airports and the health and welfare of airport neighbors are to be protected.

Planning for noise abatement can be either preventive or remedial. Preventive planning consists of anti-encroachment actions aimed at future compatible land use. It involves accurate prediction of aircraft noise and development of a noise impact map to show current and projected airport traffic and the area of noise impact (e.g., noise contours). Preventive Planning also involves the accurate prediction of future noise impact given various options and the projected non-compatible land uses for these options. The most difficult part of preventing encroachment comes in public meetings and the decision-making process when support is needed.

Remedial Planning is the reduction of existing aircraft noise. It involves the development of a noise control strategy to achieve an acceptable reduction in aviation noise. The available options for noise abatement broadly fall into one of three categories:

- reduce the noise at the source - the airplane engine and airframe configuration;
- reduce the noise of aircraft and airport operations;
- control the uses of land around the airport and remove noise sensitive receptors.

I would like just for a moment to focus on the second option of controlling aircraft and airport operations. More and more as we approach the limits of technology in aircraft and aircraft engine design and the dollar limits available to purchase new quieter aicarft or for acquisition of land around airports, we must increasingly turn to aircraft and airport operations for noise relief. Relevant Federal regulations governing use of airspace and concern for aircraft as well as public safety are very important. For noise abatement, pilot experience and pilot motivation are also very important factors and I will come back to this in considering airport noise monitoring.

A solution to any portion of the aviation noise problem requires that:

- All of the institutional interests which have some responsibility or authority work together.
- Someone must take the lead.
- Solutions to the problem must be developed and presented in a manner which the citizen and policy-maker alike can relate to and understand.

Just as the burden of aviation noise impact does not fall uniformly on all airport neighbors, the burden of implementing solutions to that problem will not be uniformly shared by all of the involved interests.

In the 1962 Supreme Court decision of Griggs v. Allegheny County, Mr. Justice Douglas, for the majority, held that it was the airport proprietor who had the ultimate say as to who used the airport and how much land area should be included within the airport's boundary, and thus the proprietor must bear the ultimate burden of liability. The Federal government has been thus far disinclined to accept any liability which the courts have placed on airport proprietors. The Federal government is, however, taking a lead in regulating the manufacture of quieter aircraft and has issued a comprehensive FAA/DOT Policy Statement (in 1976) on the actions an airport proprietor can take in alleviating Aircraft noise.

To quote Ray Glumack of the Minneapolis-St. Paul Airport speaking at the May 1978 FAA Noise Symposium on the FAA/DOT Policy Statement, "It's the most comprehensive thing the Feds have done. It really is an improvement over what existed before, but is leaves many questions unanswered.
On one hand it seems to be very generous in its interpretation of case law, congressional intent and interpretation of the statutes that say what the airport proprietors can do. It's exceedingly generous in suggesting all sorts of things to solve the noise problem. However, once again, the dilemma is then perpetuated because on the other hand it starts taking away these things by saying you cannot interfere in the free flow of interstate and foreign air commerce. You may not impose burdens. You cannot unjustly discriminate. You cannot, in any way, manage the airspace. You cannot infringe on cockpit decisions. All constitutional provisions apply. Most important of all, it reserves the right to review anything promulgated locally and judge it on how it affects air safety. This is the death blow; because if the will is not there to approve, the indisputable and arbitrary judgement that any action is potentially unsafe ends all discussions -- right now.

"The only analogy I can think of in explaining the dilemma created in the federal Noise Policy in which the airport operator has the liability, accountability, and responsibility for this dastardly problem, yet is preempted from implementing every meaningful solution purpotedly available to him is it's like the Romans taking up a collection among the Christians to buy new lions."

Things may not be quite that bad and, since the conference, the FAA has issued further guidance in the form of a Kit on Airport Noise: Its Impact, and ways to manage it.

Of the 20 options listed as available to local proprietors, I would call attention to two which I believe have merit:

- Establish landing fees based upon aircraft noise characteristics or time of day of operations.

- Limit or prohibit operations based upon specific levels of aircraft noise impacts.

The latter, incidentally, uses new language whereas the DOT/FAA 1976 Policy Statement read, "prohibiting operation by a particular type or class of aircraft." Here then is the frontier of public policy.

I believe these options give the airport proprietor the tools he needs to assume an active and leadership role in this complex problem. The proprietor can then work toward pressuring other partners to assume their rightful share of accountability, responsibility and liability. Reasonable solutions will then be implemented.

The issue of what role airport noise monitoring will have in determining aircraft noise characteristics is crucial. First, look at the alternative. Use noise characteristics determined during the FAA type certification process, or estimated by the FAA if not noise certified. The certification values were not intended to reflect actual operations and wide variations are acknowledged. Certification sites vary, the measurements are conducted by different manufacturers or contractors during different weather conditions, and the certification process has chnaged every three years. Also, in striving to produce a marketable airplane, the manufacturer does not have to worry about manufacturing variations over a production cycle of up to 20 years and a comparable operating lfetime. His focus is only on the type certification process, for which he may spend up to $1.5 million. While the FAA does issue individual certificates of airworthiness, it makes no selective audits or other form of product verification. Estimating noise characteristics of an aircraft would be a lot simpler and safer.

Each of our 450 major airports is different in location, size, mission, runway layout, and surrounding land use. Each proprietor with a monitoring capability has the potential for gathering a large statistical data bse by aircraft type and operator. Moreover, cumulative single events reflects the exact conditions experienced at the airport including pilot experience and motivation, which I mentioned earlier as important to noise reduction.

The new FAA monitoring system at Dulles Airport has the capability to keep track of individual events, and it is useful to know that the average from a large data sample showed agreement between actual values and certification values for one aircraft type (the Concorde). But I think it is even more useful to learn that the difference between the quietest and the loudest measurements were 22 decibels, because this shows a potential for improvement. Also, the fact that the Britist flew their Concorde slightly quieter than the French introduced a useful competitve factor. Now if we could introduce noise charges..................!

It is the present mix of noise sources and noise sensitive receivers that led us to the problem we now face. To say that airports were sited long ago far away from population centers, or to say that aircraft operations have multiplied far beyond what was imaginged possible is no longer an excuse. Active or even radical planning is necessary to insure and maintain the health of our air transportation system and the health and welfare of the communities which receive some of the unwanted by-products of air transportation.

EPA and FAA have much in common with respect to our goals in aviation noise abatement. This is as it should be since there can be no question as to where we are all heading, and that is toward a solution. While EPA and FAA are heading toward the same destination, we do often steer slightly different courses. Our perspectives are different-- and that is healthy -- but our goals are the same.

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Police Helicopter Noise

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1.0 Introduction

There has been a growing concern with the pervasiveness of intruding and damaging noise in urban residential areas. In addition to annoyance and health effects such as sleep interference, these noises can be damaging in the sense of taking of property - that is, people suffer a serious inhibition or prevention of space and time usage of their property. Thus, quietness in residential areas as a health factor and amenity resource is diminshing. This results mainly from air and ground traffic - buses, trucks, cars and motorcycles on freeways and streets, and jets and other A/C overhead.

To this list of intruders must be added helicopters, and in particular, those operated for law enforcement purposes. During the past 10 years there has been greatly increased usage of helicopters for surveillance in communities by police agecnies. In the Los Angeles area, 10 or more city and county police and sheriff's departments patrol regularly with small light helicopters. This includes late night low altitude operations which stay in one area several minutes. The resulting A-weighted noise levels are in the range 70 to 90 dB, significantly above the typical 50 dB background levels. As a result, concerned citizens in many communities have formed formal organizations to protect their environment. These groups actively oppose siting of helipads and register complaints about the noise. This has occurred in the Los Angeles area, in West L.A., Culver City, Pasadena, Costa Mesa, Riverside, and other cities.

A comparison of police helicopter noise levels (measured in the Los Angeles area) to other types of noise sources and urban locations, and to noise effects criteria, is shown in Table 1. The comparisons show that the noise levels due to police helicopter operations are singificantly greater than most urban background noise levels, and exceed the recommended noise limits to prevent activity interference and annoyance. Typical noise levels from helicopters as measured by other investigators are shown in Table 2 in terms of the A-weighted and perceived Noise Level scales. Additionaldetails of helicopter noise level samples measured in the Los Angeles area are shown in Table 3.

2.0 Police Helicopter Operations in West Los Angeles Area

The City of Santa Monica used two Hughes 269 B (200 HP) helicopters for several years to patrol and circle residential, hospital and nursing home areas (a 3 square mile area with 30,000 people) during daytime, evening and late night periods. Results of police helicopter noise measurements made over a period of months are shown in Figure 1. The patrol and surveillance operations provided outdoor levels of 65 to 75 dBa, and indoor levels of 50 to 60 dBA. These levels were 15 to 20 dB above the ambient noise levels and were in excess of the normal noise ordinance limits. Police helicopter take-off and landing noise levels measured in the West Los Angeles area are shown in Figure 2.

A large part of the annoyance of helicopter noise is due to the tail rotor noise and the long duration of take-off noise and search patterns noise. Therefore, using the same logic as used for rating aircraft noise, the Perceived Noise Level (PNL) and Effective PNL values for these operations were calculcated according to standard procedures. Recent data indicates that the PNL value of helicopter noise is equal to the A-weighted level plus 13 or 14 dB, and 3 dB must be added for the additional annoyance due to the tail rotor frequencies where the noise levels peak at 15 dB above the adjacent noise grequencies. Also, the duration (t) of maximum noise level is about 2 minutes for take-off, and 3 to 5 minutes for circle and search operations Using

$10 \log \frac{t}{15}$, the resulting duraction factors are 8 to 13 dB.

Thus, the take-off EPNL for the example shown is 113 EPN dB, and the circle and search EPNL is about 110 EPNdB. The results are shown in Figure 3, which presents a comparison of helicopter noise and jet aircraft noise. The data show that helicopter operations create the same annoyance as jet aircraft flying over at one mile from touch down.

For urban planning and quality of environment considerations, there are important questions to be asked about the process resulting in the use of helicopters by police departments. Some of these questions are:

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What alternative methods are there that will accomplish the same tasks as noisy helicopters?

What criteria is used to decide if or when a city police department needs helicopters? Who develops these criteria?

Can police helicopters be considered a public nuisance?

OVER-COMPLICATION OF AIRPORT/AIRCRAFT NOISE MEASURES

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Aircraft/airport noise rating scales are unnecessarily complex and cause confusion, misunderstanding, and misuse by government agency decision makers. These noise rating scales (which are significantly different than, and not to be confused with the noise level scale) are so confusing, in fact, that even the "experts" in the field misinterpret the results.

A striking example of this confusion is seen in the mininterpretation of the noise level scale and cumulative noise rating scales in a study* produced by a select committee of experts from the National Research Council (NRC) for the Environmental Protection Agency (EPA). The following quotation from the introduction of the reference study contains a significant conceptual/technical error which invalidates the key point made by the study:

> "The projections for future transporation operations and mixture of vehicles and their associated noise production indicate that increases in transportation activities--even with each vehicle at its current noise emission level--would have only a minor effect on noise levels. The decibel scale is lograithmic, and doubling of the sound pressure level at any point results in a 3-decibels (dB) increase in sound: if a single motorcycly's noise is 80 dB, the noise from two such motorcycles is 83 dB. Thus, if all transportation activities were doubled with existing vehicles and facilities, only a 3-dB increase in general environmental noise levels would result.
>
> "Conversely, cutting all transporation activities in half would result in only a 3-dB reduction in overall noise levels. The implication ias clear that any program for abating transporation noise will have to do so by quieting sources, insulating receivers, using barriers and the like, rather than by simply reducing operations."

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*Noise Abatement: Policy Alternatives for Transporation, Committee on Appraisal of Societal Consequences of Transportation Noise Abatement, NRC, National Academy of Sciences.

Part of the conceptual error in the quatation is to equate a 3-dB increase in noise level with a 3-dB increase in the value of a cumulative noise rating scale. (Note also that for technical and grammatical correctness the word level should be inserted after the words sound and noise in the second sentence.). The technical error lies in the statement that doubling or halving the traffic (activities, or noise events) causes a 3-dB increase or decrease, respectively, in "overall noise levels." The fact is the noise levels do not change at all! It is the value of the rating scale that increases or decreases, and there is no direct relation between a 3-dB increase in noise level and a 3-dB increase in the value of rating scales caused by an increase in the number of noise events. This point is illustrated by the examples shown in Figure 1. Thus, the statements made in the quotation and the conculsion are completely invalid, and a serious misimpression has been created.

The real result of doubling or halving traffic noise events would be a very significant change in the noise environment, a change that certainly would be noticed by the impacted population, and the cumulative noise rating scale does not accurately indicate the impact. Therefore, a serious mistake has been made by the transporation policy study group in propagating the fallacy of equating noise rating scale changes to noise level changes. This mistake (or propaganda) by such a high level group of scientists will undermine the important efforts by others (those in politically powerful, and policy-making decision positions) to control and reduce noise pollution by the important and necessary planning alternative of reducing transportation operations.

Another problem with the complex noise rating scales is that the noise makers have tried to obtain a "monopoly" on the measurement of the noise levels their vehicles generate, and have tried to "dictate" the conditions and equipment used for community noise measurement and analysis. Even worse, the noise makers have tried to surround the complexity of noise rating scales with a false aura of accuracy or meaningfulness. For example, in a 1974 paper deliverd to the Acoustical Society of America, representatives of the Boeing Airplane Company stated: "Unfortunately, this noise unit (EPNL) is complex and is extremely difficult to measure directly." "Clearly, community noise analysis should be based on measurements taken under FAR 36 or similarly controlled conditions." and - "controlled flight testing, together with data acquisition and reduction equipment required to perform these tasks, is very costly. Needless to say, only large organizations that have a need to perform such tests can afford the facilities and manpower." (58) The Boeing paper focuses its attention on the accuracy of a "measurement" of EPNL values and creates the impression that EPNL is an "absolute" or objective measure with an accurate meaning. By making the serious understatement that EPNL is "difficult" to measure directly, Boeing appears to have the misunderstanding that EPNL is a physical quantity. In fact, as discussed previously, EPNL is a derived quantity based on assumptions regarding subjective response. It is not a directly observable physical phenomenon (wasn't meant to be considered as such) and thus is not just "difficult" to measure, but is impossible to measure directly. The Boeing paper implies (very strongly) that only EPNL scale and the FAR 36 procedures are acceptable for aircraft noise measurements, and further, that only aircraft manufacturers are capable of performing valid measurements and assessments of aircraft noise (i.e. it is implied that measurements of aircraft noise during actual operations at an airport by an independent observer using a sound level meter are not valid for use in assessing the community noise environment). It is considered that the Boeing study does not constitute scientic proof for its implications.

Airport noise rating procedures such as NEF, ASDS, CNEL, etc., provide only a relative comparison of changes due to airport operation variations and do not indicate on an obsolute basis the effects (social, health, and economic costs) of the noise. These procedures appear to be based on inadequate and questionable laboratory test results and aircraft noise data. The noise contours obtained obtained using any of these procedures do not provide an accurate assessment of the number of people or amount of area impacted, nor do they relate directly to the effects of noise (noise levels vs. sleep interference, for example).

The public and the consultant in assessing airport noise are faced with a confusing variety of noise descriptors used by different government agencies. The U.S. DHUD and DOD use the EPNL/NEF concept based on the PNL scale for evaluating aircraft noise impact in airport communities. The EPNL/NEF concept is based on "average" subjective individual judgments and is several steps in abstraction removed from objective reality--it attempts to quanitfy annoyance. The FAA uses the EPNL concept for noise certification of aircraft, but appears to have abandoned the EPNL/NEF procedure for airport noise assessment in favor of the ASDS rating which is based on A-weighted noise levels (an objective measure) - which seems inconsistent. The ASDS system adds up noise exposure times, above 85 dBA, but make no estimate of annoyance or other effects. The EPA favors using the L⊠dn⊠ rating in general for evaluating noise exposures in terms of A-weighted noise levsls. The State of California uses the CNEL rating (about the same as L⊠dn⊠) in legal noise standards for airport and highway areas. These measures start out based on an objective measure, but end up removed from objective reality by incorporating assumptions regarding how people jude noise duration and time of event occurrence. In addition, the EPA has recently proposed a new noise rating system based on the Incremental Noise Index concept.

The FAA FAR-36 certification procedure raises several significant questions about the EPNL procedure. In the first place, the conputation tables and method contain unnecessary and scientifically unjustified accuracy--the noys values in the SPL vs. noys tables could all be rounded off to the nearest 5 units (i.e. from 36.8 to 35, or 62.7 to 65, etc.) with no loss in accuracy in the calculated PNL value. In the second place, and more importantly, the FAR-36 definition (1969) of EPNL, with the result that 'new' jet aircraft (L1011, DC-10, 747, etc.) may appear to be about 3 EPNdB less noisy than they would be if compared to 'old' jet aircraft (DC-8, 707, 727, etc.) on a consistent basis using the 1967 EPNL definition. Thus, inconsistent comparisons have been made, and perhaps noise impacts underestimated.

There is also inconsistencies and discrepancies in the aircraft noise level data base used to develop NEF, ASDS, and CNEL contours. The 'standard' EPNL, SENEL, and L⊠A⊠ vs. distance curves are not standard at all but appear in versions with different values of levels. FAA documents show a decrease in values of 'standard' EPNL noise curves while other documents show an increase in SENEL values derived from the same sources, and other FAA documents show averaged EPNL or SENEL values measured during actual operations that are considerably higher than those shown by the 'standard' curves. For example, the 1971 FAA/NAFEC tests indicate that for a 707 or 727 during take-off the 85 dBA contour area is twice or more as great as that given by the 'standard'data tables in the 1974 FAA ASDS documents. Thus, the preparer of noise contour sets can use different 'standard' data to get whatever result is desired. Another important problem is that the nature of the airport noise rating procedure mathematical relations also leads to ambigous results and possibility misleading conclusions. The following examples will be used to illustrate this point.

(1) The same NEF value can result from each of the situations listed below -

Case		Number of	
		Day Flights	Night Flights
(a)	(Typical at LAX)	333	100
(b)		0	120
(c)		2,000	0

Can peopole actually notice the difference between 100 night flights, Case (a), and 120 night flights, Case (b)? If people were stuck with either Case (a) or (b) would they choose (a) (i.e., why not accept 20 more night flights, and not have to put up with 333 day flights)?

Would the residents near LAX accept 2,000 (compared to 400) day fights even if there were no night flights?

(2) The same Aircraft Incremental Impact (AII) rating can result from both situations below -

(a) 1,000 people subjected to L_{dn}= 85dBA intrusion over a 55dBA ambient.

(b) 10,000 subjected to L_{dn}= 48dBA intrusion over a 45dBA ambient.

Case (a) is a 30dB increase in noise which is highly noticeable while Case (b) is only a barely noticable change of +3dB. The 1,000 people in Case (a) are a significant number of people at any airport. Is Case (b) really equivalent to Case (a)?

(3) A more specific example--using the CNEL rating procedure for evaluating noise exposure conditions in Lennox, California, for the south runaways at LAX, the following results can be obtained.

Case	Number of			
	Day Flights	Eve. Flights	Night Flights	CNEL
(a) (Typical 1974)	272	74	92	82
(b)	272	74	34	80
(c)	0	0	92	80
(d)	1,088	74	92	84
(e)	272	74	184	84

In Case (b) two-thirds of the night flights are eliminated (i.e., landings switched to over-the-ocean), but the CNEL value decreased only 2dB. The LAX EIR argues that this is an insignificant change and barely measurable with a noise monitoring system. However, note that all other flights--day and evening (346) flights)--could be eliminated, Case (c), and retaining the 92 night flights would still result in an CNEL value of 80. Would this also be considered an insignifant change to the community? Or, quadrupling the day flights to 1,088, Case (d), and keeping the same number of evening and night flights as in Case (a) would result in only a 2dB increase in CNEL to a value of 84. The same CNEL increase of only 2dB would be obtained by doubling the night flights, Case (e). Would the same argument then be made by LAX that the noise exposure change of +2dB is insignificant? Would the community residents actually not perceive and thus accept the change? Why install a $500,000 airport noise monitoring system it it would not reliably indicate by its CNEL value output such drastic flight operation changes as doubling or quadrupling the number of flights?

This raises other important questions such as -

Even though the SST noise per event has been measured in many instances as 5 to 15 dB higher than the noise levels of other jet aircraft, will a monitoring system at Dulles or JFK airports indicate any significant change in the numerical magnitude of the NEF or L⊠dn⊠ values for 2 or 4 daytime SST flights?

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Or, will it be argued for LAX or some other aiport that, since a 2dB decrease in NEF or CNEL is not considered significant, then a 2dB increase is significant also? And, thus, could it be argued every 5 years or so when new EIR's are produced that air traffic increases cause insignificant noise exposure changes (+2dB) compared to the existing environment, and therefore justify a long-term (10 to 20 years) buildup in the NEF or CNEL by 6 to 10 dB?

Similarly, it the argument is made that a 3 EPNdB noise reduction from SAM or some other retrofit scheme is not noticealbe by people or not significant enough in comparison to the fleet installation costs, then could it also be argued that there is no need to expend the design effort (and costs) to prevent a 3dB increase in jet aircraft noise levels?

the public perceives that dection-making officials in public agencies charged with overseeing a highly technical and complex system such as the transportation system do not have the knowledge or training to understand or evaluate the use of their own tools (i.e., noise rating procedures). The public doesn;t understand or care about the mumbo jumbo of EPNL, NEF, L_{dn}, CNEL, ASDS, etc. They want a more straight- forward answere from public agencies about airport noise exposure andits effect. Airport expansion will continue to be blocked, the credibility of public agencies will continue to decline in the public's eyes, the courts may reject the use of NEF, or CNEL values as 'proof' of noise exposure conditions, but the noise impacted communities and individuals will find ways to bring and win personal injury, property damage, and nuisance suits against airport operations.

California Noise Regulations

Richard Dyer

California Division of Aeronautics

I think maybe it would be a little bit helpful to those of you who may not be very familiar with the noise standards for California apirports if I went back in time just a little bit to review with you some of the history involved with their development. And I might add I have a 25 page presentation which I had in mind giving you; but after results of viewing your degree of participation in yesterday's session, I'm goint to shorten that, and allow more time for questions and answers. I have to leave this afternoon at about 4:15 in order to get home tonight, so your questions immediately following my talk would be most welcome, because I may not be able to stay for the entire question-answer period this afternoon.

Okay, going back to the history of the California noise standards, we must go back to the period of 1968 1969, during which there was enough of an increase in air transport service, primarily through jet aircraft activity, that the local homeowner groups around airports became rather highly organized, and set about doing something through the political mechanism in the State of California to do something about aircraft noise. There was a tremendous feeling that there was no action coming from any of the governmental agencies, and they wanted to use the State legislature in trying to do whatever is possible from a State viewpoint. In doing this, legislation was written in September of 1969, signed by then Governor Regan, which directed the Department of Aeronautics (which is now the Division of Aeronautics after incorporation into the California Department of Transportation)--directed the then Department of Aeronautics to write the noise standards which we are still implementing. And in that directive from the legislature, we were also given some pretty specific guidelines as to how to accomplish the writing of the noise standards.

And the first basic rule was that the standards be based upon an "amount of noise determined acceptable by a reasonable person residing in the vicinity of an airport." It's difficult to find that reasonable person sometimes.

We had a second guideline which essentially said that the noise standards we were to write were to include the greatest amount of local control in enforcement possible, in a secondary section that also specifically stated that County governemnts were to enforce the regulations that we were going to adopt.

And the third guideline given us was that the economic and technological feasibility of compliance with the noise standards be considered. In addition to these basic guidelines, the Legislature also awarded us an Advisory Committee, which turned out to be a very hard-working Committee, and a very essential part in the writing of the standards. That Committee was composed of seven members, which was represented by one member from the California department of Public Health (as it was called in those days), The California Department of Education, the County Supervisors Association, the California League of Cities, the Air Transport Association, and two members from local active Homeowners Associations around the heavily-impacted airport. With that make-up and with that committee, we sat down to discuss the basic philosophies which we believed were important to build into the regulations, and it was obvious that we were going to need some acoustical consultant's help in that task.

We interviewed six or seven of the major acoustical consulting firms, and hired Wiley Laboratories which is from El Segundo. They provided us an excellent degree of consulting services, and indeed worked very hard in what turned out to be a very tight time schedule.

The regulation was written and forwarded to the Legislature, I believe, in April of 1970, and was finally adopted in late November of 1970. The Legislature, in the meantime, had some changes to the effective date proposed by organizations--we were one of them--but then further delayed by another piece of legislation to December 1 of 1972 for the first date of effectiveness.

In the regulation, one of the first basic philosophies that we wanted to include in it was that the regulation be based upon as simple as possible set of rules, somewhat similar to what Sam Lane was just discussing with you. It can become so difficult to describe and to measure that you end up with something that is not really feasible, and certainly not within economic considerations which we were informed of at that time.

The noise standards, as I think many of you know, are based upon basic A scale monitoring. We found that none of the existing noise description scales best fit both a prediction, a land use planning capability, and an easily-measurable scheme. Therefore, we set about the task of creating a new one that was eventually given the title of the community noise equivalent level, and its abbreviations are CNEL. That scale incorporates all of the events which occur during a given 24 hour period. It incorporates consideration for the maximum noise level of each flight, the duration of that flight, and the time of day in which that flight occurred.

As you may know, there is an increase of weighting, or a penalty weighting system, which is applied for the evening hours, which are identified from 7 p.m. 10 p.m., and also a heavier weighting applied for the nightime hours, beginning at 10 p.m. and going to 07 a.m. the following day. As a result of part of the legislative mandate, we also developed a single event noise exposure level, which had intended to be used to establish maximum limits at any given airport for a single and individual flight. That part of the regulation has since been the subject of litigations in the case Air Transport Association v. Krotty, who was then the Director of the Department of Aeronautics, and the single event system has been judged to be pre-empted by Federal law, and may not be enforced by City, county, or State governments.

In that same case, the CNEL was considered, and it was determined that, at least on its face, there is no preemption, and that the CNEL is enforceable. And it continues to be used at all of the noise problem airports here in California.

All right. When we are going to enter a subject of setting limits and trying to do something about a noise problem, we also determined that there was going to be a need for monitoring. We set about establishing how much monitoring would be required, when it is required, and who must do that monitoring. I have a slide here which I think can be used for two basic things. We'll cover a little bit more on what the basic philosophy is, and how it can be transformed into a useful regulatory scheme, as well as the monitoring requirement. Now, this is a slide made from one of the pages right out of the noise standard. As well as calculating a CNEL for any given spot, if you did that for a lot of spots you could then convert that information to a noise contour--in other words, a line of equal noise value. And this is commonly done, I think the majority of you are familiar with that. In the terminologies used in the California noise standards, a different scale of criteria is set for some of the airports, but the particular criterion which applies to any given airport is called the noise impact boundary. And if we think of this outer line here as being a noise impact boundary, that is the thing which is of importance to a given airport once it is designated to have a noise problem by the local county in which it exists. I'm sure that you can understand, or hope that you do, that these are runways at a given airport, and their operations establish a noise environment which is then described by these lines.

The primary requirement contained in the noise standards, and the real guts of them, is that the noise impact area should be zero. What that means is that the areas contained inside that noise impact boundary should all be of compatible land use, as defined in the regulation. Compatible land use would be things like industrial uses, commercial uses, and zoned open space, or airport-owned property. Residential uses are not compatible, as I'm sure you know, and that is omitted from the definitions of compatible land use. Incompatibilities would be residential, schools, hospitals, and maybe other noise-sensitive uses. Now, the airport proprietor is given the responsibility of bringing this situation, if there should be incompatibilities inside this noise impact boundary. It is the responsnbility of the airport to bring those back to zero.

The requirement contained in Section 5062, which is the specific requirement area, says the airport shall not operate with a noise impact area other than zero unless he has a variance. We had to take into account the economic and technologic feasibility of compliance when we wrote this regulation. Aand knowing that if you were to place a common standard throughout all airports in the State that this is going to be a different--the feasibility of complying with that standard would be different at each airport because no two airports are the same. Their land uses are different, the aircraft which use them are different, the entire noise environment around each is dissimilar from the other.

In light of that, and the fact that we knew that some of the airports had incompatible land uses built very close to them, it was recognized that some of them would not be able to comply with the basic criterion for several years. And therefore, a special procedure to take that into account is written right into the noise standards. I was given the title of variances, which is a very unfortunate choice of words, because in most people's minds, when you use the term variance they think of a complete forgiveness of the entire regulation. That's not the case. A variance is intended to give additional time, and maybe consider the addition of certain conditions being attached to that variance when they are shown to be reasonable. So anyway, the variance system is built into the regulation. It's key guideline as to whether or not they are granted is, Is it in the public interest to grant those variances? And we hold public hearings on that question. In fact, we are just in the fifth day right now, one over at the Hollywood Burbank Airport, on that very subject. And we have an Administrative Law Judge who hears these cases, and writes a proposed decision which is usually adopted by our Department.

Okay, that essentially covers the real guts of the regulatory scheme included in the noise standards. Now, in order to find out where all of this is, and where that line lies--the noise impact boundary, primarily--there was a monitoring requirement included in the noise standard. And it essentially requires that where this noise impact boundary extends into incompatible land use, that that location be proved up (or validated, if you like that word) through the use of noise monitoring systems, which are required to meet a certain accuracy tolerance which is also specified in the noise standard. Those noise monitoring systems are situated in such a means so that they can acquire the location of that contour within a + or 125 decibel tolerance.

Okay. Also in the noise regulation are a lot of other things, the necessary definitions. There is a section there that discusses means by which reducing the noise problem can be accomplished. And I'll just read a few of those to you. They are things like, "Encouraging the use of the airport by aircraft classes with lower noise level characteristics ...;" second would be, "Encouraging approach and departure flight paths and procedures to minimize the noise in residential areas ...; the third is, "Planning runway utilization schedules to take into account adjacent residential areas ...; the fourth is "The reduction of the flight frequency, particularly in the most noise-sensitive time periods, and by noisier aircraft ...;" the fifth is "Employing shielding for advantage ..." which is a little bit difficult except for along the sidelines of an airport because, as an aircraft takes off, you lose the advantage of shielding; and the sixth is "The development of compatible land uses within the noise impact boundary ...;" and there's a provision contained in that recommendation that says that the conversion of residential to other land uses which are compatible is to be considered to be the least desirable means of complying with the noise standard. When you have to uproot people, there's a very difficult situation that arises. It's expensive to the airport proprietor involved; it still, at times, has been determined to be necessary and the best way. And it is being done at some of the airports here in California to reduce the noise impact area, however.

All right, I've been running along through the overview, as you might think of it, of the noise standards. And at this point I think I'll bring you up to date as to which airports have been considered to have noise problems, and where they stand as far as requesting variances, and that sort of thing. And then following that, I would like to ask for your questions.

As I mentioned earlier, but didn't emphasize, in consideration of the guideline given us that the local government be given the greatest amount of control in enforcement possible, we determined that it would be best suited for the County Board of Supervisors to determine which airports in those counties had a noise problem. Thusfar, there have been eleven airports in the State of California determined to have a noise problem. They are: San Francisco, Oakland, San Jose, Los Angeles International, Long Beach, Burbank, Van Nuys, Santa Monica, Orange County Airport, Ontario International, and San Diego Linberg Field. Two of those airports have since been declassified by their local county Board of Supervisors. Those are Van Nuys and Santa Monica. They are essentially general aviation airports, and they were in full compliance with the regulations at all times, even though they were at first declared to have a noise problem. Of those nine airports which remain declared to have a noise problem, the San Jose Municipal Airport since 1976, which was one of the change of criterion dates, has not been able to comply with the basic criterion, has requested one variance, been granted that variance, and has now requested a second, and we have a public hearing scheduled to consider that second variance request next month.

Los Angeles International is not able to comply with the basic criterion, and has had one variance issued, and has another one on request. And again we have a public hearing scheduled for that airport also next month--we have two public hearings next month.

We are just concluding the third application of variance for Burbank. The Long Beach Airport has been able to be in compliance since it was first declared to have a noise problem, but it is a very borderline case. Noise monitoring is just now being initiated, and that noise monitoring may show that there is, in fact, a noise impact area greater than zero. We will have to wait and see what that shows.

The Orange County Airport has a noise impact area greater than zero, and has applied for three variances; two have been granted, one is now still pending.

Ontario Airport has, in the past, needed a variance. One was requested and granted. The current information is that because of the east end of that airport being totally in land uses that are compatible; that the runway use programs at Ontario have been able to retract the noise impact boundary, and put it into a compliance position. So it was out of compliance for a while, but the efforts there to reduce noise over there, which is where the noise impact area was, have reduced the size of those contours, and it is now in compliance.

And San Diego Lyndberg Field is in process of gaining its second variance at this point. I should also add that, since we knew that several of the airports in California were going to not be able to comply with the basic criteria, as when the regulation first became effective, that this variance procedure should be thought of as a special procedure, and that once it is considered and granted, that that does constitute compliance. ; Legally it does; however, they are operating in excess of the basic criterion contained in the regulation.

Okay, with that, that pretty well wraps up the quick run-through of what the regulation is. I know that many of you here have been working with this regulation personally, and I'd like to field any questions that you have at this point. Yes?

[Great amount of helicopter noise]

W.C.M: I'm sorry to interrupt. We have a beautiful example of police helicopter noise going on. The only thing we can do is to close the doors. (A reference to a hot day)

I come from Torrance: My question--I tried to establish a fact. If I understand correctly, the criteria--one of the criterion which you use in your CNEL is single event criteria, SENEL. And you're telling us that you're taking--have taken out this, out of your California Utility Code. Is that correct?

I think you asked another question first of all about the legality. Let me clarify that in your mind. The enforcement of the SENEL is the thing that has been pre-empted by the Federal government. It has nothing to--and that's through the police powers of the State or counties, in accordance with our specific noise regulation. It did not addresss what can be the actions taken by the airport proprietors. That's still relatively the same as it always has been, whatever it is--there's questions as to what it is. But is has not been--

Well, that would give me part and parcel, because you say that community noise equivalent level is acceptable, but that CNEL is made up ...

Okay, the regulatory schemes are the thing--

... of single event plus the ... events. If one is illegal, how you can attain the other one out of the formula? If A and B equals C, and you take and say A is illegal, but C is legal ...

It's in the method of how--it's in the method of how it's applied. We cannot address the imposition of fines to a single aircraft operation. But the Court did not find that the CNEL, at least on its face, the way it's written in the regulation, is also pre-empted. They do not believe that the CNEL regulatory scheme is a kind of a thing which is going to directly involve aircraft in flight, and which would be the subject of Federal control.

But how can you measure it if it's illegal?

Oh, there's no restriction to its monitoring.

Really? Well, perhaps not, but--not today, perhaps--but let me read a little passage from the brief of the United States of America ... that was filed with the Federal Court over here in the case of Santa Monica, and it makes me wonder a little bit what comes next. And the little passage. The SENEL neccessarily affects the flight path in the operation of aircraft. Because the noise monitor--and I repeat because the nosie monitor--is fixed at a known location on the ground, ample opportunities for avoiding it are presented. Now, the civil and criminal sanctions imposed for violation encourage pilots to turn away from the monitor, or conduct the flight with reduced engine power until the monitor is passed. These maneuvers could impact the safety of life. Now remember, the key word is safety, like we heard yesterday, and who determines what is safe? Now, what I'm saying implies that, according to this doctrine, you can have monitors whether you have SENEL legal or illegal. You can monitor period, because one of the pilots--even if you have monitors, and you don't set the levels for your SENEL, he might--he would know that he is being measured, monitored anyway, and he'll that--some funny thing. And they say, he caused a safety problem, crashed ... on my house, because of the reason of having a monitor. So the thing is that what they can do when they fly over the monitor. Now, so how can you measure, and where, for CENEL, if you can measure your single event thing? Which knocks out your formula. Then, let's see--

Okay, let me answer that part, first of all. I don't believe that there is any restriction to the monitoring of SENEL. Secondly, some of the systems go right beyond the SENEL function. They simply monitor as would be the basic formula for SENEL, they monitor an hourly noise level, and don't even calculate the SENEL. You can do it either way. So you can still achieve the monitoring required for the CNEL issue without ever stopping to calculate each of the SENEL's, if that's the desire of the proprietor involved. Now as it turns out, they're interested in SENEL, and every system has that capability.

Well, I hope you're right--at least, you're probably right for today. But further, they say flight operational maximum single event noise levels by an airport proprietor are invalid because they may attempt to exercise local police power over the aircraft while in flight, and because they attempt, in effect, to control the flight path of aircraft through navigable air scape over which the United States has exclusive regulatory authority. And I just, you know, like having this kind of measure of maximum event that's allowable, the FAA says no no. But I just wonder what would happen. We have a 55 miles per hour speed limit. And some guys go faster, and a cop catches up with the guys, and they go at 100 miles an hour. Now, then what happens, the guy crashes into a pole and kills some other guy, perhaps, in the process. The cop, or the system, created a safety problem; people got killed. Does it mean that we should pass a law that cops should not chase another guy at a higher speed than 55 miles? That's an analogy that applies over here, because you can induce a safety problem; therefore, you should not create that condition. And I'm saying the cop should not chase the guy at a higher speed than 55 miles, because we can read the newspapers, there are accidents and safety problems involved with the case.

All right, thank you very much for your comment. Are there other questions? Yes, Mr. Heath.

My second part of the question, I notice in the different parts , the titles, of 8729, that there are several titles ... It mentions in 8729 the use of FAR36. Nowhere in that new law does it mention CNEL. Now, if that's the case, can you enlighten us what the difference is between FAR36 and CNEL? And if there is a difference, which one is going to govern in this State?

Okay, yes. First of all, yes, we did help shape and influence the Anderson Noise Bill, actually right from its outset, when they had hearings here, and in trips by the man seated immediately behind you and to your right about three chairs who attended several of the--or at least two of the hearings back there, and presented our Department's view on that bill.

Second issue: you may recall from one of the early titles, the way the bill was first written--I haven't seen it the way it was passed--but the way it was first written, one of the requirements imposed upon FAA would be the development of a standard means of describing noise. We don't know what that's going to be. The FAR Part 36 which employs the effective perceived noise level, the very sophiscated system, probably would not be the type of an animal to be used if monitoring is to be contemplated, because monitoring is so complex and expensive, you know. But I don't think anyone can answer your question as to what will be the final noise description method which will evolve from the passage of 8729, and its counterpart the Cannon bill, once those two are meshed. I would expect to see something similar to the CNEL or SDN-type methodology, which are more simple, based upon A Scale, and are a lot less expensive to use. That's only my opinion.

To follow that question up ..., exactly would your Department be allowed to participate?

Oh, I don't have any idea. That's an FAA function, as I recall, that's written into that bill. FAA will do a study and determine what should be the common noise description method.

I'm familiar with the regulations. But what we don't understand, and I represent the Greater Westchester Homeowners Association, has been it was pointed out here today that we have all of the different standards for ... the environment here. So we listeners know it, we hear it every day in and day out, night after night, and so forth. We've lived with it for a number of years. We're looking for a solution to the problem ... We want to keep air transportation, but -- now, this goes on and on. So we'd like to see it solved, after twenty years--I've lived with it that long--... twelve years, we've had to keep out of Court; but we were forced to go into Court ... We have to do it. The lawyers like to file law suits ..briefs. And it goes on and on. But what we're lookin' for is a solution. Could you have any recommendation you could make without jeopardizing your position ..., that you would recommend? And I understand--I've lived quite a long time, a long time, I'm disillusioned in America, I can tell you. We get lip service, we get ... to get rid of us; but you're not gonna get rid of us, we're gonna be right there again, you know. So what's your recommendation? How do we get rid of this damn thing and solve the problem ...?

Well, that's a very difficult question to answer, or course. And the only thing I can tell you is that those people who are in a position of responsibility in government have to take into account the impact of their action on the entire population. They can't favor any one segment, or they can't take some action, which would be good for one part of the world and maybe destroy something in another section. They have to balance their actions as to what can be done.

I think you're aware of the benefits that will derive from the passage of the Anderson Noise Bill. That's the biggest single step that can happen right now to really resolve this issue. That's gonna provide enough front money to do things which are gonna bring about the implementation of new, quiet technology airplanes at a faster rate than would happen otherwise, and that's where the solution lies. You have to quiet the noises at the source. If both the Anderson and the Cannon Bills provide a great incentive for replacing the existing aircraft with the new technology aircraft. And it brings with it the money.

There's an interesting story. Back when Part 21 was amended in late 1976 to require all airplanes to meet Part 36 by 1985, there was always, through the development of that law a funding package included with it. At the time of finally getting the Part 21 fund requirements, which require meeting Part 36 in the point of regulation, it was too late to get the funding section through Congress, and the funding part was severed. Therefore, that put into regulations the requirement for air carriers to comply, but without the funding sources that had been discussed all the way through the Development. So that's why now, since that time, it has taken two years to finally get to where we are now, with the Anderson Bill to put money into the system which was always considered a very necessary part of the whole package. So it's coming, but it's gonna be slow. There's no way that it's going to happen overnight. The only other alternative would be to stop flying, and when you do that, you have economic impacts which are not acceptable to the general public. It has to be balanced. And I think that you can understand that, if you can try to see it from the overall governmental viewpoint.

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That's the way I see it, thank you.

Jim Hoyt, Santa Monica: I appreciate your clearing up the SNEL, because it has not been--the code of law has not said that it cannot be applied by a local proprietor, and I--

Remember, I'm not an attorney, and I could be wrong.

I'm not either, but I think that's a very important case, and it's important because of our law suit that that not be bandied about that it's been thrown out, ... is not. Let me, on the other hand, make another comment to you that is probably ... with the State regulation, as such. We have a general aviation airport as you mentioned. We are very large in operations. We average, probably, in operations every thirty seconds on a 16 hour day, 365 days of the year, which makes us a lot of operations. The problem with that statement is the 16 hour day. We operate basically during the day, time of daylight, not at night. Our operations drop off to almost--well, even before we put the curfew on, we were averaging less than one an hour during the night. Now when we try and come up with the C level rather than the CNEL, we find ourselves with a very low impact of noise because of the large number of hours in which there are no operations at all. We find that extremely difficult. I'm wondering if the State has any, sort of intermediate area to go from the single to the 24 hour average. There must be something like an hourly average that we could use. Because if you look at our airport with the limit that you're suggesting now, we have no noise impact. And on the other hand, during the day, we are putting operations over top of houses every thirty seconds.

Okay, now the hourly noise level is defined, and is one of the means which can be used to calculate the CNEL, the 24 hour average. However, there are no limits ascribed to that. We felt that most people are responding to what happens during a day's events, and there's no 8 hour limit or 16 hour limit, or any attempt to write limits to just certain segments of the day. We can't do it all, I guess. Yes sir.

John Le Resche, Torrence. Since the noise contour lines are so, sort of crucial on whether or not an airport has a legal noise problem in the State of California, I wish you'd show that ... on again. Now, it's pretty obvious that you could not have derived as detailed a contour line as that from one, two, or three noise monitoring stations. Now, do you have a standard model that you apply that can be quoted, and is readily available, so that people know how it's constructed?

You mean actually how the curve is shaped in here?

Do you have a standard model that you apply to the shape of the curve?

You mean, computer model?

Any sort of a model that can be used, because as it is, you have to have some sort of a model to get that shape from two points.

Okay. When we first wrote the regulation, there was--you were just coming into the use of the computer technology to draw these contours. They were still, a lot of them, being drawn by hand. And we took into account the need that you're going to have to place monitoring closely enough to this contour to find it. Since that time, the computer technology is good enough so that we now see most people using a combination of computer technology, which is based upon knowledge of what airplanes operate from that runway, what time of the day they operate, and how noisy they are--to sort of set a standard for where this contour is expected to go. And then that contour is then calibrated by the actual monitoring information.

What is--do you--what--do you have that standard model available?

Oh no, we did not produce a standard model for the shape of the curve, no.

So in other words, what we have is two--these are all derived from two or three noise measuring spots, and some assumptions which vary with every guy that does it.

Each acoustical consulting firm probably has their own idea of where those contours are, based upon their knowledge and their feeling for expertise. Now, they normally don't vary a lot, but they certainly do differ in some degree.

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I've got three different questions, and one kind of follows up what he was just asking. I'm from Long Beach. You're mentioned we're very borderline. The standards provide for one and a half DB tolerance. That spread like a block or two in a residential area right alongside a freeway, or whatever, and we do have problems, freeway noise intermixes with our airport noise. But I am reminded that when LA County first was put into the act, they hired the Northrop people, they did a study, and they brought up some of the problems with tolerances and other--I'll call them ambiguities, perhaps they're not really that strong--and these resulted in an exchange of letters, and discussing problems. I'm wondering if any of these things like tolerances have ever been refined and defined in any formally-published guidelines or publications. I appreciate the EPA's putting out publication lists and things like that, and making it easy to get publications. Perhaps your agency provides that, but I have never seen anything like that of readily-published guidelines to elaborate on the details of your State noise standards.

We do have documents of that. It is, first of all, specified in the noise standard, it's the back part of that document that gives those specifications. Seocndly, the Wiley Laboratories firm provided us a background document at the time of writing the noise standard, which goes into the rationale behind that. And I could provide you a copy if you want to give me your business card or something.

Excuse me. I think that was the end of our time. Perhaps you could save the further questions until later this afternoon.

I'll be here up till about 4:15, and I understand we'll begin the question things at three o'clock.

P. Patrick Mann
Senior Associate
The Aroyo Group, Pasadena, California

Because my presentation will deal largely with Los Angeles International Airport, I'd like to briefly diagram it over here, so those of you who are not familiar with the runway lay-out won't be lost in some of the specifics that I'll go into. It's an airport with four parallel runways in two pairs, a north pair and a south pair. The north pair--Yes?

...

... Okay. A north pair of shorter runways, and a south pair of 12,000 ft.runways, which are offset somewhat from the north pair, with the ocean running something like this, north being this direction. Roughly 20% of the approaches now occur on the north runways, 80% on the south. The departures are almost split 50 50; it's roughly 45% departures on the north, 55% on the south. Almost always, the airport operates toward the ocean, because of the prevailing winds which blow from the ocean during the daytime. So I have a slide presentation, if we could start the slides now.

Dick Dyer gave you a good explanation of the background of the California airport noise standard. My chief function at the City of Inglewood was to identify how Los Angeles International Airport could reduce its noise problem, and how the City of Inglewood could act to encourage it to do so. The principal vehicle for gaining any kind of noise abatement at Los Angeles International Airport, we saw, as being the State noise standard. We would use the California airport noise standard as our framework for a solution to that problem. So we spent a considerable amount of effort to determine just what Los Angeles International Airport could do in the framework of meeting the California airport noise standard. And I'll briefly go through what is involved in those noise standards as they apply to Los Angeles International Airport. First, the noise standards require a monitoring program. Los Angeles has instituted a monitoring program that shows the system in operation. Requires us to use that monitoring program to calculate noise contours, showing the noise impact on the surrounding area.

And here you can see the impact of the existing contours at Los Angeles International Airport--the north runways shown up here, the south runways here, with relatively short noise impact contour from the north, quite long on the south, showing the 80% approaches on the south runways. As aircraft leave the ground at about this point, you can see the point that Dick Dyre mentioned, that fielding can be effective when the aircraft are on the ground; once they get up in the air, the terraine and the housing and so on does not field the further distances from the take-off noise, and the take-off noise spreads out a very great deal. You can see on this photograph where the noise problem exists at Los Angeles. We have ... over here, one of the largest night problems at Los Angeles. We have the City of Inglewood right over here, largely residential. The City of El Segundo down here, about 1500 residents, almost every one of them affected by aircraft noise. The noise contour which is currently the legal noise boundary at Los Angeles is a 75 decibel DNEL contour. This encompasses Something like 20,000 people at the present time. The 65 CNEL contour, the ultimate boundary, goes out to Central Avenue in the City of Los Angeles--it doesn't show on the photograph, but it's across the Harbor Freeway. It extends about five miles from the airport, and then up to Manchester Boulevard. This encompasses somewhere between 100,000 and 150,000 people, about a billion dollars worth of residential property. So it's a very significant noise problem at the present time.

So our first program at Inglewood was to decide how the airport could best meet the current noise standards. And the State noise standards give the airport a very flexible hand in dealing with the noise problem. There are three basic ways you can deal with noise. You can deal with it at the source, at the apth, or at the receiver. And the State noise standards indicate that the airport can use any of those techniques that it wants to. This kind of shows that that source-path-receiver situation as it exists at an airport. We have a--the noise source is the airport ..., the design of the airport, number of operations, when they occur, the flight path they use.

Noise path, the principal effect that can change from one airport to another would be barriers or structures that may exist to vary the noise. Temperature and humidity can change it on a day-to-day basis, but the changes are usually not significant in terms of analyzing the noise problem. The noise receiver, whether or not there's an impact, is a function of the population, the area, the value of the property that's there, and so on.

The weak point in this whole system as it feeds back through the location constraints where land is devleoped, where demand for land occurs, what the airport system is designed to be--there is, essentially, no feedback from the land uses to say if there's land there; they couldn't be flying airplanes over it. The State noise standards do start to provide some kind of feedback loop so these things work themselves out in the system.

Dick went through the things that the State noise standards say an operator can do, and that's a very fundamental aspect of the noise standards is that they fall directly on the airport operator, the airport proprietor, because the airport proprietor, under the Federal legal history, is the only person who can institute specific things that might otherwise be pre-empted by Federal law. There's even a recent case down in San Diego that indicates that the State itself may not be able to establish specific conditions under a State noise standard, but it may be limited to saying, "You must reduce your noise impact boundary by a certain amount, and it's up to you to determine how that will be done."

So we looked at these various things that the Department of Airports at Los Angeles might be able to do, encouraged use by low noise aircraft, encouraged approach and departure paths to minimize noise, runway utilization schedules, reduction of flight frequency, employment of shielding, and development of compatible land use. The first thing we're doing, we decided we would look at the very short-term things: What could they do essentially tomorrow to reduce noise? Could they, in fact, meet the State noise standards tomorrow by some reasonable technique, some reasonable combination of things? And the things that they can do tomorrow don't include such things as developing compatible land use. They don't really involve such things as building sound barriers. We're talking about reductions in flight frequency, scheduling, changes that we might make to approach and departure paths in a minor way that doesn't require new instrumentation, new runways, things like that, and encouraging use by low noise aircraft.

As far as compatible uses, this just lists the compatible uses that are considered in the State noise standard. The principal problem, of course, is residential development as the incompatible use, although there are some opportunities. In existing residences, acoustical treatment is an effective and accepted means of meeting the State noise standard. And high-rise apartments, where we're not depending upon exterior environment for a great deal of the utility of that land use--high-rise apartments with sound treatment are acceptable.

We identified a total of 19 different options which were basically combinations of three or four specific techniques a modified approach pattern, which included changing the distribution of aircraft as they use those runways. We tried to concentrate them on one runway or another, and so on, change the distribution from north to south. Shifting the runway threshold for landing; it turns out that the landing threshold can be shifted, the aircraft can land further down the runway without changing the use of the runway for take-off. The take-off can still occur at the same point, and the take-offs that are critical on the south runways ... Expanding the hours of over-ocean operation; currently, because there's a low wind condition at night, and a low traffic, aircraft land from the ocean side during the nighttime hours from midnight till 6:30 in the morning. And it was our assessment that that can be expanded till 10 o'clock till seven, with minor limitations on, for example, the number of aircraft permitted to enter the LAX air space during those hours. We also looked at a 50% allocation of take-off to the north runway, because that's been a requested policy of the City of El Segundo for many years, and a 50% allocation of landings to the north runways because that's been a policy of the Los Angeles Departmrnt of Airports for many years, that they eventually intend to go to 50% landings and take-offs on the north pair of runways.

So these alternatives were all calculated using one of these computer models such as was mentioned here before. We used the FAA integrated noise model to identify the noise impact of each of those alternatives. The way we did it was to develop a grid cell system around the airport, and for each of those grid cells, the noise level was calculated using this integrated noise model. Then for each of those grid cells, we identified the land use, which existed in that cell in the airport area. Each of these cells is about 100 yards wide, 100 meters on a side, and there were 20,000 different cells for which we calculated noise levels and identified the land use. And depending on the noise and the land use combination that existed in each one of these cells, we identified whether or not a noise conflict exists. And we generated a computer map for each of those 19 alternatives showing the location of conflicting land uses around the airport, the runways being right here, the approach pattern coming from this side, and there's enough approaches that make a curved approach down from the north that the entire area between both the approach patterns is included in the existing noise conflict area.

This map basically shows all those cells which have residential use, or schools, other incompatible uses which are exposed to greater than 65 decibels on the CNEL scale. The more heavily shaded areas that you can see to a certain extent are the areas exposed to more than 75 decibels on the CNEL scale, current noise standard limit. So for each of those 19 alternatives, we identified those specific locations where there was a noise conflict. This shows the affect of the 2,000' runway threshold shift which FAA determiend would cost about $6,000 to implement at Los Angeles International Airport. It raises the aircraft flight path about 105', if they're on instruments and they're exactly aligned with the flight track. That results in about a 32% increase in the height of the aircraft as they're going over Sultan School, the closest incompatible land use under the south runway approaches. They are raised from roughly 250' to roughly 350' at that point, a noise reduction of about one and a half to two decibels. Though it's not a great noise reduction, it turns out is has some effect in reducing the area of incompatible land use under the approach.

The expansion of over-ocean operations from the current midnight hour until ten o'clock shown on this graph shows the daily operation, going from midnight here to 6 o'clock in the morning, to noon, 6 o'clock at night, back to midnight. You can see there's a very great increase. Up to about 7 o'clock in the morning, the hour from 7 8, there's a low number of operations, and from 8 until 9 o'clock at night there are on the order of 80 operations an hour, all day long, very little change from one hour to the next. From 9 10, there's a sharp reduction in the operations, and then from 10 11 it drops to below 40 operations per hour, and continues to fall during the nighttime hours to below ten operations during the 3 a.m. 4 a.m. hour, and then back up again at 7 o'clock. So it was our assessment that there was a significant difference between the hours before 10 l'clock, and the hours after 10 l'clock, and that it would be reasonable to determine what you could do in a short term to expand over-ocean hours till 10 o'clock at night. It didn't appear to us to be reasonable in the short-term to look at the other hours, because there's a very strong objection of the pilots and so on at the present time. It didn't seem to be feasible politically to get that kind of thing investigated by the people who could do something about it.

This shows the affect of some of these strategies combined on those noise contours. The grey outline is the existing situation--you can see the wider thread of it here in the south runway. The inner line shows a combination of possible strategies. This one is including a 50% allocation of landings to the north runway, which results in a significant shift in south runway contour, with about a 30% reduction in operations. It includes a 2,000' threshold shift which moves the contour 2,000' on the landing. And it includes the 10 p.m. to 7 a.m. over-ocean operations. And it results in rougly a 30% reduction in the noise impact area under the California airport noise standard. But it doesn't come close to complying with the State law, even at the 75 CNEL standards that exist today. There's still many thousands of acres of residential land that's impacted by the 65 CNEL line under this alternative. So it didn't appear to us to be, from looking at this, another alternative feasible today in the short-term to demand compliance with the California airport noise standards to say Los Angeles International should not get a variance today, because it has some feasible, reasonable means that tomorrow they could meet the California airport noise standards.

Here's another alternative that could be adopted. This alternative involves the threshold shift of 2,000', and the 10 7 over-ocean operations, but maintaining the balance between the runway with 80% landing on the south and 20% landings on the north, and reduces the noise impact area to virtually zero on the north runway, but maintains a significant noise impact area on the south runways in El Segundo and in Inglewood.

This is a chart that summarizes what we found out from some of the most important alternatives. Some of the things we thought might be effective like changing the distribution of aircraft among runways rutned out not to be effective. We were not able to decrease the noise impact area by more than 5% by any allocation of aircraft among runways that we could determine. However, by the time we got to the threshold shift of 2,000', we were looking at roughly a 7% reduction in the noise impact area. The threshold shift was one thing we determined was of some significance in reducing noise impact. Going to the 10 7 over-ocean operations made a very significant difference in the noise impacts. That was the only strategy we identified that we considered to be a very significant strategy for reducing noise impact in the short-term.

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The scope of actions that we can take is greatly increased. We can look at things such as building a new airport, allocating more of our operations to Palmdale and Ontario. We can look at a wider range of operational changes--construction of a new runway, or extension of the runway; major construction projects; installation of a curfew at Los Angeles International Airport. We did not consider this to be an acceptable short-term alternative because there are many operators at Los Angeles now who depend on that airport for their late-night operations; and there are some operations which are currently geared around a nighttime arrival and departure, particularly of cargo, mail. As a short-term strategy, that does not appear to be appropriate. But with a Palmdale and an Ontario available, the curfew becomes a very feasible thing at Los Angeles International. If those users who now depend on Los Angeles can be told that ten years from now you must phase out that nighttime operation at Los Angeles Airport.

We can also look at sound insulation of existing residences over the long term. We can look at redevelopment of those area where there doesn't seem to be any other appropriate strategy. And as Dick mentioned, the State noise standards said that that's an undesirable strategy, it's the least desirable. But there are situations where that must be used, and it's our--the City of Inglewood's--position that if the airport refuses to do anything else, that it has the obligation and the State has the obligation to require it.

To do that, land acquisition. The land acquisition is one thing that's clearly within the police power of the State to require of an airport, and it's clearly within the authority of an airport to condemn land for airport purposes whether it's within the jurisdiction of the airport or outside it. The Los Angeles Department of Airports can come into Inglewood, for example, and condemn land, if it has no other choice.

So, in looking at the future conditions, we identified about 80 different operational alternatives that the Department of Airports could look at, and for each of those 80 alternatives--well, we actually selected a subset of those, about 20 of those alternatives--we examined a different subset of land-related strategies. We looked at some different redevelopment programs, and sound insulation, and so on. So for a total of about 140 different basic strategies combining all of these different things that can be done, we looked at what the situation would be in 1986, when two things occur: the 65 CNEL contour becomes the effective legal noise limit, and we expect nearly full compliance with FAR part 36 in the aviation fleet. The compliance with FAR Dart 36 results in
To do that, land acquisition

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about a 50 60% reduction in the noise impact boundary from that effect alone. So it goes a very long way, it goes farther than any of the strategies we can implement today to reduce the noise impact of LAX.

We looked at alternatives involving all of these things at the 1986 case. This shows the affect of the changes that involve strictly schedule restrictions. This is the baseline case that would exist under LAX's projected 1986 operations--a full FAR Part 36 fleet, 50% operations on the north runway and 50% operations on the south runway, a midnight to 6:30 a.m. over-ocean oper. That results in an 1129 hectaires of land exposed to 65 CNEL or greater, and 390 hectaires exposed to 70 CNEL or greater. And hectaires convert roughly to acres by multiplying by two and a half. So this is on the order of 3,000 acres of residential land, something like square miles of residential land impacted under the 1986 case.

Using the 10 7 over-ocean operations, under that condition, results in a reduction in something like 15 20% in the noise impact, a significant reduction when you're considering that that difference in residential land is on the order of a hundred million dollars, if you were to go out and acquire it. So is it worth a hundred million dollars, for example, to have 10 7 over-ocean operations? What's the trade-off. From 10 7, we said what happens if we limit it to stricly the most critical nighttime operations, if we, say the airlines have to bid for 25 take-offs at night. That also reduces it in a very similar way to the over-ocean operations effect. But if we have a full take-off curfew at night--now, this is a very effective strategy, almost a 30% reduction in the noise impacts, about 25% by having a 10 7 take-off curfew. Combing the 10 7 over-ocean operations with a 25 take-off limit reduces it still further; combining 10 7 over-ocean with the take-off curfew cuts it by than twothirds, roughly 60 65% of the baseline noise impact reduced by allocating those nighttime operations to other airports that have lesser noise problems. Well, the schedule restrictions saying while it's kind of an innocent-looking little part of the potential strategies that an airport can undertake can be extremely effective in reducing the noise impact.

Another alternative is extending the south runway of the Los Angeles International Airport. There are aeronautical onstructions here at the Dune area in Los Angeles. The dunes are about 50' higher than the runway elevation. There is also the habitat of an endangered species, the El Segundo Blue Butterfly which exists out here. This are is within the jurisdiction of the State Coastal Commission. So the extension of the runway which requires some grading or other action in the dunes we considered to be currently impractical as a long-term strategy--something possibly to consider, but likely to be very costly, and politically very difficult to implement.

So we looked at what can be done without influencing these areas out here. The Department of Airports says they can extend three thousand feet without getting into aeronautical constructions on the dunes. We looked at a two thousand foot runway extension which, if you'll recall, we could do a landing threshold shift without any runway extension; having the extension allows us to further shift the landing threshold, and gives us a more significant reduction in noise impact. This shows the impact of the two thousand landing threshold shift alone, almost indistinguishable from the baseline case. However, by combining that two thousand foot extension with a four thousand foot landing threshold shift,we can reduce noise impact by roughly 15%. So perhaps a 20 40 million dollar project to extend the runways can reduce the impacted residential land value by something approaching 100 million dollars.

Other specific cases we looked at included the following procedure. This is a plan that's been widely discussed at the Los Angeles International Airport since the north runways were ever projected. It involves having all landings on the south, and all take-offs on the north, so that all the landing impact would occur in Lennox and Inglewood--the southern part of Inglewood--all the take-off impact would occur in Westchester, which is in the political jurisdiction of the City of Los Angeles. There is a very difficult political problem in shifting the impact from El Segundo to Inglewood, but the fact that the impact is concentrated results in a very significant reduction in the total impact area. The plan becomes a very effective way of reducing noise. It also significantly reduces the capacity of Los Angeles International Airport. Whether that capacity is reduced to a point where the demand exceeds that capacity is something we're not really sure of. It probably does significantly reduce the capacity during instrument conditions, but it's quite possible that we could implement the ... Plan during visual conditions without a significant impact on Los Angeles Airport. If we assume that we can only do ... 90% of the time, then there is significantly less benefit in implementing the ... Plan. If we have to 10% of the time, in most severe weather conditions or something, go to the standard operation pattern, we're faced with less effectiveness.

24 hour over-ocean operations, which has been widely discussed as the ultimate solution to Los Angeles International Airport is, in fact, a very effective solution, but it's not the ultimate solution. It does not solve Los Angeles Airport's noise problem. It still leaves two square miles realtively of residential land impacted by aircraft operations at the 65 CNEL level. And that's only if you have total split of operations so that all the departures are on the north, all the landings are on the south. So there's virtually no impact on the south, heavy impact on the north, and a very difficult solution from a political standpoint. Using south departures only, much greater impact: also difficult from a political standpoint. With balanced departures, so that there's some way of shifting, say, from day-to-day or some other way, so that we can have half the departures on the north and half on the south, much less benefit from the 24 hour over-ocean procedure. In fact, roughly the same as the noise impact from implementing the schedule, the full schedule of schedule restructions which we outlined before, expanding over-ocean until 10 7, and having a take-off curfew at 10 o'clock at night. Roughly the same impact from going a 24 hour over-ocean operation, with a balanced departure scheme.

Some other cases we looked at were reducing the airport's capacity to 30 million annual passengers. Los Angeles proposes to expand its operations to 40 million annual passengers by roughly 1986. 30 million is roughly what they're running as of today, 30 million annual passengers. So if we stayed where we are today, or went up and then back to where we are today, without any other changes, we reduce the noise impact by 15 20%. Going to 30 million annual passengers with a 10 7 over-ocean operation, another s ignificant reduction. Our good strategy of 10 7 over-ocean operations with a take-off curfew included with runway extension results in a better condition than the 24 hour over-ocean operation, if we stay at a 30 million annual passenger capacity. And combining 30 million annual passengers with 24 hour over-ocean operation and these other actions results in roughly one square mile of impact. This, I would consider personally, to be a rather extreme case of operational changes for noise abatement. And we're still only able to reduce that noise impact area to one square mile; that's a very significant area. That means ten thousand people would still live in a noise impact area at Los Angeles if all of these things are done, and no other actions are taken.

So we're faced with saying, it's not likely that Los Angeles can meet the California noise standard by operational changes alone, and we weren't too surprised to find that out. We have always considered that it's appropriate to look at compatible land use as definitely a suitable noise abatement strategy--prohibiting development in undeveloped areas, requiring sound insulation, or redevelopment of existing homes, treatment of existing homes with sound insulation. So we looked at, as I said, a redevelopment strategy that would involve tha total demolition of this area, which is south of Century Boulevard, goes over to Hollywood Park, down to 108th Street or Lennox Boulevard in Lennox, from the San Diego Freeway a mile and a half to Prairie, and two miles to Yukon in Inglewood. This is almost entirely residential development, mixed, multi-family and single-family units, and represents probably 150 200 million dollars worth of residential property. But it's residential property that under no alternative--virtually no alternative except a 24 hour over-ocean alternative--will never be of an acceptable level for residential use. So with this redevelopment strategy, we can see some reduction in the total noise impact. The redevelopment of the City of El Segundo at the current time is politically unacceptabl. The city feels that they can live with the level of noise impact that they have if they're just treated fairly.

In Westchester, the limited area that's exposed under the future conditions, is now considered to be politically unacceptable to go farther. So other strategies have to be looked at in Westchester. So we're looking at redevelopment to handle only part of the most significantly affected noise problem. With the 10 7 over-ocean, and a take-off curfew, redevelopment of that specific area at 150 million dollars, brings reduction of about half a square mile to one square mile of impacted use. With a take-off curfew and a runway extension, reduced from the 1129 hectaires to 324 hectaires, about 1.3 square miles--almost as much as with the 24 hour over-ocean operation.

So even with redevelopment of the most impacted areas, we didn't consider it feasible to look at redevelopment of all the impacted land areas. For one thing, for impacted land, the existing developed land, redevelopment at the 65 CNEL contour line appears to be a rather extreme solution. It's a very expensive solution, and we need that housing in this area, and it's an area where it's primarily low and moderate income housing, and there's no way that that housing can be rebuilt in the current market to serve those same people.

So we looked at sound insulation as a strategy--sound insulation of existing residences is not an effective strategy. It is a partial strategy. It's one thing that can be done to partially mitigate the impact of airport noise. It also has a very high cost. These are 1969 prices, you can probably virtually double those prices at the current market, although these are rather small homes that we're talking about. To get ten decibels worth of reduction involves about today probably ten or eleven thousand dollars in a typical home in Inglewood or El Segundo. For fifteen decibels of reduction, we're talking double that price. So what we've said is let's look at the ten decibel reduction strategy, and that's one of the things that can be applied to meet the California airport noise standards. The letter of those noise standards in the areas that cannot be redeveloped or cannot be brought outside of the contours by operational changes.

And another strategy is noise easement, and we didn't include George's red dot on this map, either. But this shows the noise easement that the Los Angeles Department of Airports has acquired to the present time through Court action. These are actions in inverse condemnation in this case. But if it were required to meet the noise standard by the State, probably the least expensive solution from the Department of Airport standpoint would be to purchase noise easements, by direct condemnation, on every property within the noise impact area. The least expensive solution on the Department of Airport's part, and also the least effective. It does very little. The principal effect, as the City of Inglewood sees it, is to encourage the airport, because it has to otherwise spend money to take other action. And it's my feeling that it's probably why it was put into the State noise standard, to say that if you can't do anything else, there's something you have to do in order to ultimately meet the standards, and it's gonna cost you at least a little bit of money; so look at some of the more effective things that you can do.

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So we get to this point, and it becomes a political decision now, partly a decision by the State Department of Aeronautics how far they will require the Department of the the Airports to go. It becomes a political decision on the part of the City of Los Angeles to determine how much emphasis they'll place on Los Angeles Airport, as opposed to Palmdale and Ontario. That also has ramifications for every other jurisdiction in the Southern California area, whether Palmdale or Ontario will be expanded faster in order to reduce the burden on Los Angeles Airport. It's a political decision in local jurisdictions, whether they'll accept redevelopment as the strategy to solve the problem in their jurisdiction; whether they'll assist the Department of Airports. For example, or the Department of Airprots will assist them in redeveloping land. Redevelopment in the area around the airport does not involve just clearing land and leaving it vacant. There's a very significant demand for that land for industrial use. There's a very tight market around the airport for air freight ... and other airport uses. And although it costs you money to buy that land, demolish homes, and then sell it for industrial use, it's not as if you just had to buy the land. You do get a significant amount of that acquisition back. And local agencies under State law have redevelopment fact increment financing still, for the next year or two at least, and adopt a redevelopment project and put tax increment moneys into these airport redevelopment programs.

So the yellow line, or the yellow shaded area, represents the area that will be impacted in 1986 if none of these other strategies are put into effect - if there is no expansion of the hours of over-ocean operations, if there is no take-off curfew; if there is no extension of the runways and no runway threshold shift, if there is no redevelopment, no sound insulation, no acquisition of noise easement. In this area in El Segundo, we're talking about soune insulation very likely, acquisition of noise easements, perhaps, in the most extreme areas where sound insulation is of moderate benefit. Over here, it's been the City of Inglewood's recommendation that redevelopment be looked at. Redevelopment has been explored in this area for many years in the city, just from an industrial demand standpoint, under tax increment financing. The fact that there may be some airport moneys if the airport is forced to comply with the standards simply assists in the redevelopment of that area. Areas of Los Angeles--again, the political solution has been reached in Los Angeles, and it's politically unacceptable at the present time to expand.

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So we're looking at sound insulation and acquisition of noise easements in the areas north of the airport.

So that's the solution of the airport noise problem at Los Angeles International Airport. I've been glad to be the one who found out what it was.

US: I don't know whether I have a question or a remark... I think there's been too much emphasis on California State law. Now, let's take an example. It's permissible, non-intrusive for a plane to fly over someone's house every ten minutes, day and night, producing a noise level of 70 decibels--that would fit within the proposed law. I think that many people--certainly many people in the community-- feel that somehow that law is not related to the community noise problem.

P.P. Mann: Right. I did not make the State law, but I disagree with that, and I try and argue that with whoever I can. As a planner involved in solving airport noise problems, I feel that the CNEL is a very effective tool for analyzing the difference between noise abatement options. I think it puts them into a very good ordering, so that you cay say this one is better than another. There are many things that you have to put into there, and there are many things that you have to be very careful about. It doesn't deal well with things like over-ocean operations where you're drop in CNEL is one decibel, yet you've totally freed six hours of nighttime from noise impact. And somehow to me it seems like the impact is more significant than you expect from one decibel, say, if every aircraft were one decibel quieter.

Irene Stern; W. Los Angeles Federation Against Jet Noise: I would like to ask Mr. Mann to how this over-the-ocean approach was planned in such a way as not to disturb the people north of the airport? Because I don't know how it was originally planned. All I know is that during the six hours which Inglewood is totally free of noise, the communities above the airport are woken up every hour on the hour by the local management of the air control tower, which permits the planes to delay up north. They are delay-vectored along the coast over the residential community, and in effect, the people north of the airport, from Pacific ... through to Malibu, don't have any night's sleep.

PPM: Okay, two points. I both agree and disagree with you. If I thought that that was the only way that the over-ocean operations could be conducted, I would say they ought to be conducted in spite of the impact on Malibu and Pacific Palisades because that's a much lesser impact than the impact on the City of Inglewood that is relieved from this procedure. However, I'm sure that the procedures were examined from a traffic control standpoint, and there are options that could also reduce the impact on Malibu and the Palisades. So if that were the only choice, I'd say we should make that choice. But I don't think it is, and it probably is something that can be analyzed.

John Le Reche, Torrance. Mrs. Grindel has just spoken about self-serving reports coming in. I only will say one thing. Torrance had five EIR draft reports before one was accepted.

SG: How many have we had in Orange County for the Orange County Airport? Four? Three? Yes Sir?

US: You mentioned disenchantment--excuse me, Ben Warren from Long Beach again--disenchantment with the concept of navigation easements. Earlier, Mr. Mann discussed noise easement purchases, and he also discussed insulation as being one of the alternatives. Do you think of all these things as being more or less synonymous? And would you discuss your disenchantment?

SG: I'm not sure I understand the question, but I made a statement that navigation easements, to me, were not a solution. They do nothing to stop the noise. A navigation easement is only for homes that are already there. All we're doing is paying someone to ... to the noise that exists. I don't feel that's solving the problem. That doesn't create less of a health hazard or whatever. I am definitely in favor of home insulation for those that are in existence at this time.

Mike Cartsonas, Phoenix, Arizona. In relation to your discussions with the Air Force Base, I'd like to ask a couple of questions--or, I'm sorry, the Marine Base. It's obvious that it's known that the military air bases are exempt from local regulations, on the one hand. Second, that military aircraft are not designed to fly quieter and fly more safely. Their mission is different from that. My question is, in your probing for solutions in Orange County, have you found that there is cooperation by the military in order to minimize the impact of the noise-generating characteristics of their operations?

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SG: There has been far more cooperation from the...Orange County to solve the noise problem than there has been from the politicians in Orange County to solve the problem. They have bent over backwards to not only comply to the extent that they can with local regulations, but they have also done what they can to curtail and change their operations. I am sure that there is more they can do. But the politicians' solution is to literaly tell the Marine Corps base, you've been here long enough, get out. And there have been undercurrents of effort on individual politicians' parts in Orange County to run the Base out of Orange County. I don't want the Base run out of Orange County. I feel a little safer because it's there.

MC: Do you have any problem with thinking of the future, and the possibility that the noise mission from military aircraft might be on the uprise ...?

SG: When I was on the Planning Commission making a big effort to get the Board to not lift the CNEL ban, but to even expand it in view of the new noise study. One of my arguments that I used was that, if anything, it was very likely that military aircraft in the future would be noisier, not quieter, because they did have a different one to fulfill. Is there anybody else? Yes Sir?

Ellwyn G. Brickson, Orange County Health Department. I have the dubious distinction of writing the report from the Health Department that was not admitted or believed in that past little occurrance out there. I certainly thank you for bringing to light all the events that have led up to that, including the review of the noise contours, and the development of the new sets of contours that we discovered years ago, or that there was a problem years ago, in areas that were way out of the 65 CNEL. Miles form where there should have been, we were getting noise complaints. Now, one of the things about the meeting today, few of the professional people have actually been out in the field to interview people in their homes on noise complaints, and that is our business of solving the noise problem. In the case of aircraft and other types of noises, we are preempted, but we can still in the EIR process--we are saying that, don't put people in a noisy area. And this is the political solution that has not been arrived at, as Mrs. Grundel said. So thank you again.

SG: Thank you, sir. Yes Ma'am?

Ellie Larson, from the Bay Region: These problems that we're hearing about today are new for some of those from the Bay Region. It's a little different side of the story. I'm wondering, what has been the role of the Aiprot Land Use Commission, the State-mandated Airport Land Use Commission, in the problem you described?

SG: The Airport Land Use Commission?

EL: Yes. And has there been any effort to revise that legislation?

SG: I can't answer specifically about the legislation. I'm not that well informed about it. But I can tell you that, in Orange County, the five-man Board of Supervisors has literally tried to scuttle the Airport Land Use Commission. The first year that it was in effect, the Board of Supervisors would not fund them, and I think they gave them a nominal $500 budget for one year. Well, that's hardly enough to-- $300 budget? Which is--that's like giving them nothing. And it takes a four-fifths vote to override the Airport Land Use Commission, and it's easy to get four votes to support development in Orange County. In fact, it's not hard to get five votes. So the Airport Land Use Commission has been looked upon by the five-man Board of Supervisors to make the final decisions, as an undesirable necessity thrusted upon them by some other jurisdiction, namely, State government. Any other questions? Yes, Sir?

Eric Graham, with United Western Newspapers. As a local airport operator, what responsibility does the Federal government have in controlling development? It seems like it sets a precedent for a lot of the new airport developments like PIA and Ontario ...

SG: Well, I've got my own opinion, and I know that some of the people at El Toro Marine Corps Base certainly agree with me on this. I know that El Toro--and let me just use them as an example--they would very much like to be able to buy some of the land adjoining the Base, in order to have it under their jurisdiction, and take it, you know, then you don't have the problems of your depriving someone of their right to develop their land. Although there are many uses that could be placed on land other than residential development. Right now, the Pentagon has not authorized funds with which to purchase adjoining lands next to military bases, in all cases.

And that is something that I hope the Marine Corps Base is still working on as a means of buying up this land, because if you're depending on political solutions, I think you're going to lose out in the long run. But I believe whenever you have objectionable operations, like a sand and gravel pit, that the guy who comes in and puts in a sand and gravel pit, when he acquires that property to dig out, he better darn well acquire a buffer zone around him. Local government better be specifying that there be a buffer zone, so that the two of them share in this expense. The sand and gravel operator shares in that he bought the land; however, when he's through mining it, it's a useful part of a reclamation project, and local government should identify imposing requirements of a buffer zone into the sand and gravel zone. This could be done around airports. But things which can be done in the future; you can't go back and do that now, unless you go back and buy the land. I don't know whether that answered your question, but it's a half-hearted attempt, I guess. Thank you very much.

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POLITICAL CAUSES OF AIRPORT AND COMMUNITY CONFLICTS

by

Shirley L. Grindle

Ultrasystems, Irvine, CA

In looking at the speakers that have spoken for the first part of today and yesterday, I have the feeling that you've been hearing mostly about how to deal with problems that have been created by things that we have done in the past. When I agreed to speak here today, I said I could only speak, not from a technical standpoint or from a knowledgable position of how to solve noise problems that already were in existence, but I would like to speak from the position of one of the major reasons that we find ourselves in the position of having to deal with almost unsolvable noise problems. So I'm goint to speak from the position of being a politician, and being very critical of past politicians and current ones who fail to look ahead and avoid the problems that we're talking about today. I'm not as good a speaker as our former gentleman was, who seemed to know the subject like the back of his hand, so I will be having to read a portion of my speech. And I do have copies out in the foyer if you would like them.

All across the nation airports are being closed; flight operations are being curtailed; airports are being picketed; elected officials are being recalled; and lawsuits are being filed --- all over the issue of airport noise inflicted on nearby residential communities.

Just last year a jury awarded a Newport Beach homeowner over $300,000 in damages caused by noise from commercial airplanes using the Orange County Airport.

There are currently over $30 million worth of jet noise lawsuits pending in Orange County along.

And here in Los Angeles, city taxpayers have forked over in excess of $120 million since 1970 to purchase 1100 homes around Internation Airport -- homes that should never have been buildt in the first place -- but which were approved by

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~~*Shirley Grindle~~ is an Aeronautical Engineer and was a member of the Orange County Planning Commission from Jan. 1973 - Dec. 1976, serving as Chairman for 2 years.

politicians in office years ago.

All of these events reflect the incompatibility between airports and residential communities. They are a direct result of the failure of elected officials to disapprove residential developments in areas surrounding airport. They are situations which typify the American democratic system that allows those who move into an established environment to complain about that environment -- be it a dairy farm with its obnoxious odors, or a san and gravel pit with its objectionable dust and noise, or an airport with its annoying airplane overflights and safety hazards.

Millions of dollars have been spent by local governments nationwide to undo the problems created when homes are built near airports, or under airplane take-off and landing patterns. Solutions ranging from navigation easements to quieter plans have been tried to no avial. Lawsuits continue to be filed, they are larger in terms of the damages that are being asked for, and the courts are continuing to award damages in a substantial number of these cases. Public outrage over nearby airport operations continues at an even more intense pace. The fact that the 'airport was there first' carries little weight with the new homeowner who just plunked down a substantial portion of his life savings to buy his home and finds that he can't get a decent nights sleep because of the airplane flights over his house.

Recent settlements awarded in Orange and Los Angeles Counties, as elsewhere, are an ill-needed encumbrance on the thousands of innocent taxpayers whose money is used to pay for damages awarded by the courts. Remember --- taxpayers are people like you and like you and I --- innocent victims of political ineptitude by elected officials who gave their approvals to the homes that were built near airports, and which unsuspecting homebuyers eager to own a piece of America plunked down their hard-earned money for.

The greatest failing of elected officials of both yesterday and today is their inability and unwillingness to make tough decisions which deal with the long-range future of a community. First of all, most politicians don't have much vision. In fact, ask any politican who has run for office and you will find that the future to him is his next election --- ususally no more than 4 years off. Not very long-range it it?

It should therefore not be surprising to you that politicans tend to act at the behest of those who are instrumental in getting them re-elected. Many times an intimate love-affair between the politican and his large campaign contributors is maintained at the expense of the general public. That is, decisions tend to get made for the immediate benefit of the campaign contributor ENVEN THOUGH it is detrimental to the long-range future of the general public.

This is precisely what happens when politicans are asked by developers to approve residential developments near airports. Who benefits from homes built in noise-impacted areas around airports? Certainly not the new homeowners who unsuspectedly move into these homes! Certainly not the users of the airport, or the airport itself! And certainly not the general public who in the end pays for the lawsuits.

The only ones who do gain are the developers who build and sell the homes and then move on to their next project, and the Politicans who collect large campaign contributions from these developers for "seeing things their way".

As a prime example of the political causes of airport and community conflicts, let's examine a situation now taking place in Orange County.

El Toro Marine Corps Air Station is one of the nation's largest and strategically important military bases. It is the training base for jet pilots and aircraft carrier landings, plus it serves as a staging base for overseas operations vital to our national defense. It has been located in Orange County since 1943.

This base is situated in the southeastern part of Orange County - where thousands of new homes have been constructed in the past 10 years to accommodate the rapid influx of population moving into the county. Up until recently, development was at least 5-10 miles from the base; however, the wave of advancing residential tracts has now crept to within a mile or so of the base perimeters. Vacant lands immediately adjoining the base are being rapidly acquired by land-hungry developers intent on getting approval from the County Board of Supervisors (B/S) for buidling large residential tracts.

Up until now, the County B/S has abided by a long-standing policy which prohibits residential units from being constructed within areas subjected to noise levels of 65 CNEL or greater.

About two year ago, however, several large land developers intent on casing in on the growth boom in the Orange County began to put considerable pressure on individual Supervisors to rescind this policy. They obviously wanted more land on which to build and if they could convince the Supervisors to lift the 65 CNEL ban, as much as 5000 more acres could be opened up for development around the Marine Base. This means a potential 10,000 new homes, which at today's average selling price in Orange County results in a cool billion dollars. The profit margin on a billion-dollar development project in Orange County could be as much as 400-500 million dollars. Is it any wonder that the developers are putting considerable pressure on the Supervisors in order to lift the policy banning residential development within the 65 CNEL zone around the Marin Corps Base?

Simultaneous with this sudden push to relax the residential housing ban, the Orange County Planning Commission (of which I was Chairman at the time) convinced the B/S that the noise contours surrounding the Marine Base were out-of-date and a new study using more modern measuring equipment and up-to-date aircraft performance characteristics, was commissioned.

Sure enough -- when this new study was completed, almost 4,000 more acres of residentially-zoned land were found to be within the 65 CNEL zone and were therefore banned from residential development.

You can imagine how this information was received by the development industry -- not too kindly I can tell you! And the B/S found themselves between the proverbial 'rock and a hard place'. Should they stand firm on their policy and ban another 4,000 acres from residential development and in so doing suffer the wrath of the developers who just happended to be the source of 75% of their campaign funds? Or should they change their policy and expose future homeowners to adverse noise conditions and involve the taxpayers of Orange County in the endless lawsuits that would inevitably follow?

Not surprisingly, the B/S managed to find a 'middle ground' solution which at first appeared to satisy everyone's concern but in reality was a well-disguised backdoor approach to lift the residential ban and permit the developers to go ahead with development in the 4000 acres. What the B/S did was to adopt a new policy which, simply stated, says that "Residential housing will be permitted in areas within the 65 CNEL zone IF the developer can prove that his particular project is not exposed to the 65 CNEL noise".

20 months have passed since the adoption of this new policy. And we have seen one request after another for residential projects with this 65 CNEL zone. Each of these projects has been accompanied with a technical report claiming that the subject property is "just outside of the 65 CNEL zone". Not suprisingly, no developer has yet divulged that his property lies within the 65 CNEL zone". Not surprisingly, no developer has yet divulged that his property lies within the 65 CNEL zone. In fact, it appears that the 65 CNEL zone around the Marine Base is actually non-existent -- or so you would conclude from information submitted thus far by the developers. The noise-impacted area around the Marine Base seems to have mysteriously disappeared within the past 20 months.

The developers and their hired consultants are succeeding in convinging the politicians in Orange County that their projects are not subject to harmful noise conditions. For example, just recently, the B/S approved a 500-unit residential tract which the developer and his consultant said were not in the 65 CNEL zone. IN SPITE of offical testimony from the State Office of Noise Control and the County Health Department that "noise from the planes posed potential health hazards to future residents" and IN SPITE of a recommendation from the Airport Land Use Commission that the development be denied.

The citizens of Orange County are rigthfully questioning the validity of noise studies that are conducted by developers. In fact, the 1977-78 Grand Jury came to the conclusion taht these studies were biased and they recommended that the B/S hold fir to the banning of residential construction within the 65 CNEL zone as established by the County and not by each developer.

It goes without saying that elected officials nationwide are supposed to be acting in the best interests of the general public. I interpret this to mean the protection of future residents from adverse living conditions as well as protection of those airports which are being operated with taxpayers money.

It is a matter of record that homes which have been permitted in airport noise-impacted areas have inevitably cost the taxpayers not only in terms of court-awarded damages, or acquisition of air rights, but also in outright purchase of homes as is the case here in Los Angeles.

It is also a matter of record that these same neighborhoods eventually unite to oppose needed expansion of the airport in the future. When this happens, the entire economy of an area suffers since industry and commercial enterprises rely heavily on airport services which must keep pace with the needs of a growing population.

There is no excuse for any elected official to claim ignorance of the likelihood of future problems and taxpayer liability. The daily papers are full of news items to this effect, nd the courts are full of lawsuits --- all symbolic of the fact that residential communities and airports SIMPLY DON'T MIX --- no matter how many rules and regulations there are.

The real problem we face today as a nation is not whether the United States can produce quieter airplanes BUT can we produce qualified elected officials --- people who have vision, intellect and guts? We need decisions that are made in the best interestes of the general public and these are made only by strong individuals who don't mind risking their political future to make those decisions.

There are some favorable signs on the horizon. Just recently the Hemet City Council in Riverside County denied a large residential development which would have caused the demise of the Hemet-Ryan Airport had it been approved. This decision is one of the unique ones in the world of politics and Hemit officials should be commended for acting in the best interests of their community -- perhaps at the expense of their own political future.

Throughout this nation, new laws have been passed requiring disclosure of the source of political campaign contributions; some communities (such as Orange County) have also passed laws limiting the amount of campaign contributions that can be given to elected officials by special interests and their lobbyists. These laws are vital if we are to remove the tremendous influence that special interestes and lobbyists have on elected officials through the medium of large campaign congributions. Removing this influence should enable politicans to make rational decisions in the best interests of the general public -- decisions such as "not permitting residential developments next door to active airports".

It is too late for thousands of residents and dozens of airports who find themselves uncomfortable neighbors ... BUT it is not too late to avoid these problems in the future.

Now, as an afterthought, I want to tell you that what I have told you is probably an oversimplification of a very complex problem, but it is coming from a different viewpoint, and it has its merits; and, of course, we can all shoot holes in it. But I don't think there's anyone in this room that would augue that a lot of the decisions that were made in the past were very, very poor decisions, which are really costing us now. Are there any questions?

Note: At this point there is another question which is impossible to hear.

Unintelligible question.

The State Air Political Practices Commission would not be looking into that. They would be looking into bribery, failure to disclose source of campaign funds. I will tell you that Orange County has the distinction of having had 39 political officials endicted in the last three years. I think we've set a record second only to Cook County, and the FPPC has been one investigatory body. Let me ask someone else--you, sir, in the middle.

Ms. Grindel, I agree with pretty much what you're sayin'. I'd just like to put an addendum on this for Orange County. I'm Major Harlan Jones from El Toro, and we are currently hosting a series of conferences of all the major acoustical engineering firms, and local government surrounding El Toro, to come up with a standardized, binding methodology on all acoustical engineering firms that want to do a study in Orange County for a developer to challenge the 65 CNEL line. We should have this completed hopefully within the next couple of months. When this has been completed, Washington has already agreed to incorporate this into our ... document, and it is gonna be our recommendation that the Board of Sueprvisors then adopt our ... document as binding. What this will do is standardize and limit all future acoustical studies in Orange County so that they will essentially be on a level plain, and hopefully not biased.

I wish you luck, but I hope that the politicians will condescend to that. I see some familiar faces here from Orange County. This gentleman is one of them.

Bob Green, Environmental Management Agency, County of Orange. I have the dubious distinction of compiling the standardized methodologies to be used on the El Torc study. And Major Jones has indicated, we're trying to get a consensus of all the parties that generate the studies, the independent consultants as well as the Marine Corps and the County's side of things, so that when we are finished, we'll have a document that everybody can not only abide by, but everybody has a feeling of authorship in that study. Anyway, we asked all the firms for input in that respect, in addition to the State or any other interested agency, and copies of the methodology would be available if persons wished to contact the Orange County Environmental Management Agency. Right now, it's a draft document, and it will be undergoing major revision by about October 6. So after that time, a draft would be ready, I'd say, in a semi-finalized form prior to adoption by the Board. So it's something we're working on very heavily.

I think what you are doing, and working with the Marine Corps and doing all this, is a good step in the right direction, and that is a step to remove technical decisions from being made in a political arena. It should not be a matter of being able to influence votes to get three votes to approve development; it should be a matter is it in a noise area or is it not?

That's essentially the DEMA's position in developing standardized methodologies is to get the technical facts in front of the decision-makers, and let them make policy decisions essentially, which is why they're in there in their position. Make policy decisions based on the best objective scientific data that we can generate.

Hopefully, with your work, and the recently-adopted tin cup campaign reform ordinance in Orange County that we will have got them from both ends, and forced the politicians to stop making technical decisions and make policy decisions. Yes Sir.

Who writes the Environmental Impact Reports ...?

In Orange County, the developers hire their own firms to write the Environmental Impact Reports.

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Well, that's like ...

Well, not really. We have a very qualified Planning Department Staff who, by the time a developer's EIR firm has gotten through their third degree, it is a fairly good EIR. It's much better than what I've seen in most other jurisdictions. So we really can't go after the EIR people on this.

They are. Oh yes. The whole noise issue around El Toro has been one of the biggest battles down in Orange County in the last three years, and it actually occurred about two years ago when the new study was done that divulged that we're really that there were really 4,000 more acres impacted by noise. And of course, that area has developed so fast that we now have people living there on tracts that were approved three and four years ago, and now they're hearing all this noise, and they're now the new people that are complaining. You know, it's the same old ball game all over again. And they are the people who are helping me and others, trying to stop the furtherance of building residential developments in these areas. With all the money that's been spent across the nation, a lot of this land could have been bought for some other purpose.

Gertrude Marks
President, Brentwood Homeowner's Association
Member of the West Side Federation Against Jet Noise
Also a Member of the Citizens City-Wide Advisory Committee
to the Los Angeles Airport

In addition to the above I'm also in business, if that might interest some of you. I think that when I first began as a public citizen against this noise, I was accused--and I'll try and keep out names, because there are certain adversary positions that exist here--that I was accused of the fact that if I had anything else to do, I wouldn't be interested at all in being bothered by noise. As it happens, I have a very busy career, which I won't go into right now.

When I first began becoming quite active about all this was about 1969 1970, and I must give a great deal of credit to a lady who is not presently here right now; her name is Ellen Stern Harris. She is now a Consumer Affairs Writer for the Los Angeles Times. And it was Ellen bringing to our attention, and bringing to everyone else's attention, the fact that we had to do something about seeing what, if anything, could be done about the numerous over-flights over West Los Angeles. The heavy planes were coming by at the rate, we timed them, of about 45 per hour, at certain times of the day, and were flying at such a low altitude that it was almost impossible to enjoy the privacy of one's home.

One of the other things--there are also, of course humorous things--that come up sometimes, whether it be black humor or any other kind of humor. And there is also a sad quality to a number of these things. One: just recently, my having attended an FAA meeting on the noise which wanted to extend the variance for the Concord, the gentleman was present--I even met him at lunch, he wanted to know what a fat cat like myself from Brentwood was doing complaining about the noise of the Concord? Well, I may be overweight, but I'm not a fat cat from Brentwood. What it is is that I am extremely interested in the noise that permeates this entire Basin. And I commend Dr. Meecham on his interest in areas that are underprivileged. It was very difficult for various members of the FAA to realize that we could be interested in areas other than our own--like Playa del Rey, like Lennox, like a number of the other noise impacted cities. So we formed an ad hoc committee. That ad hoc committee, at that time, incluced a number of the Homeowners Associations. Dr. Meecham was one of our advisors, even at that time. We had heard about his work, and his interest in this hearing. We had contacted people at the FAA, and of course one of the very first things that is put up against all citizens is the question of the controllers. I know when I went to the West Side group against jet noise, they had the controllers coming down to speak. Well, there was a time when both motherhood and apple pie were very, very popular. Well, motherhood today is a little bit in question, apple pie is fattening, and you can't attack controllers; they're the people that really help us keep our flight safety.

Now Congressman Ryan in San Francisco said that even today the FAA, and to some extent those who belong to any organization, ... automatically as a kind of knee-jerk response holler safety as soon as any suggested change is made. As soon as you say safety, you duck under the tent of people's lives, and nobody wants to jeopardize people's lives. But as soon as you've said that, the tent has spread so broadlyy that there is a substantial reason to question the validity of the argument used when safety is the word that is mentioned.

Safety is a very good ... word; we commend the FAA for the safety of LAX, they have done an excellent job, we admire the job they've done there. But since 1970, and that's when we finally succeeded in getting a Congressional inquiry, believe it or not--and it was at Los Angeles, a Subcommittee On Science, Research, and Development at the Federal Building. Dr. Meecham was not able to be present at that time, but he did make available to us his report. Among people who spoke there were Dr. Chancy Star, who was then Dean of the School of Engineering; Dr. Larry Ruff, Professor of Economics; Frank Byson, who was the State Environmental Quality Committee. And he made a statement that the results are very interesting, that just because something is possible doesn't necessarily mean we have to do it. Ellen Stern Harris was one of them--Dr. Willard Libby was on that Committee.

I didn't want to quote some of the names in an adverse way, but Dr. Karl Kryter. I remember him very vividly, because he said, it is only you West Side people who complain. He said, I don't know why we don't get complaints from people to the south, south of the airport, and east of the airport. And I answered him then. Because those people don't know how to organize as well as we do. They don't have the money. They're so busy trying to survice, as Dr. Meecham told you, that they have a very tough time trying to do it. I spoke to a lady who appeared from Ontario, I met her at lunch. She said one of the reasons--they have a great noise impact there--and one of the reasons they're finding it so difficult to fight it is because it primarily represents Chicanos, and they don't know how to organize when it comes to something of this kind.

Now, it is important that we realize that the FAA has a very serious function and responsibility, and we recognize their responsibility, we recognize their function. But one of the things we must also recognize is that this is a regulatory body that has a conflict. The FAA as a regulatory body not only regulates aviation, but it promotes it. Now,when we talked about plans for aircraft to go out over the ocean, what we get back is the cost to the airlines. That's not our problem, and we don't feel it should be properly their problem. Now, this conflict of interest is, we feel, a very serious one. It does not detract from our respect for the people who are active in protecting the safety of everybody who is airborne. Now, at this point we do feel that we have to stop and think what kind of society are we going to live in? Because air traffic is going to be increased, it is not going to be decreased. You see, constantly they are going to lower prices--this morning's paper spoke of doing away with the CAB. Now if there is no longer gonna be those things which are a necessity on the ground before a route of any kind is established for public transportation, like that of convenience and necessity, we're gonna have problems that we're not gonna be able to handle.

There have to be regulations as to the number of flights, where they go, and how often. LAX is already overburdened. They are planning for expansion. I don't know how that expansion is going to be handled. And we have been going through the Citizens Advisory Committee, through Mr. Edgerton who is here today, and through the Head of LAX, has established this City-wide group of citizens. Now, don't confuse this with the Airport Commissioners; we're not Commissioners, we carry no real power. I was appointed by Mayor Bradley, through Counselman Braude who's in our District. And I'm very interested in this. I've taken the time to do this. And I, too, an a professional. I take time away from my professional life to see about improving the quality of everybody's life. And I am not just interested in Brentwood alone. And I don't think that there can be any partisan interest on the part of any single one of you individuals sitting out there. I think that you have to realize that, ad hoc committee. That ad hoc committee, at that time, incluced a number of the Homeowners Associations. Dr. Meecham was one of our advisors, even at that time. We had heard about his work, and his interest in this hearing. We had contacted people at the FAA, and of course one of the very first things that is put up against all citizens is the question of the controllers. I know when I went to the West Side group against jet noise, they had the controllers coming down to speak. Well, there was a time when both motherhood and apple pie were very, very popular. Well, motherhood today is a little bit in question, apple pie is fattening, and you can't attack controllers; they're the people that really help us keep our flight safety.

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even as Judge Gray wrote just recently in talking about the jail downtown, that even a man who has broken the law has a right to smell fresh air, and see the sky. Why it is, then, that people that are gonna live around the airport must so reinforce themselves that they have to, as Dr. Meecham says, be sealed into their homes? If our society begins to go in other ways, we'll soon be barred in, sealed in. And the quality of life is not only disturbed from the point of view of noise pollution, but then we find ourselves exceeding to those things where a problem can be solved. What we're asking the FAA to do--we're asking that there be perhaps a noise abatement organization set up to monitor, to police, to supervise, whatever word it is that you ought to use. But I think that something has to be done.

I do not believe that the deregulation of the CAB is necessarily an answer that's gonna help anything. I don't believe the arguments that come up that the airport was there first, therefore these people came in. These people were trapped in a situation that was--Mr. ... I'm sure, could bring up that they were trapped in much better than I can--but developers come in and move in right behind it. When I went to an FAA meeting, the accusation was made against me that I was a newcomer to all of this. The idea then was to get a variance for the landing of the Concord. And I sat and listened to all of that. There were very few people in the audience, but there were a couple of busloads of youngstudents from a local High School, mostly Black students. The PR was laid on very heavily about what future, what jobs they would have, and how great this would be to permit the Concord to land here at LAX. Now, the Commissioners, not the Advisory Committee,the Commissioners had voted against the landing of the LAX--I mean the landing of the Concord. Now, no one--they didn't seem to find time for the students until someone--a woman, I don't remember her name--said that she insisted, on behalf of these students, that some one of their spokesmen at least be permitted to speak. And this young girl got up with two young boys at her side, and she said, we have heard everything you have to say. And what we do find out it, you are talking about jobs. If under this noise you cannot get an education, we cannot even think about jobs. And I think that's something that you have to consider.

Dr. Meecham went out to Lennox and found out that these grammar school children down there were getting so nervous on the playground that they could hardly stand it. Teachers can't teach. Now, there has to be an overall plan for this, it cannot go on this way. Since 1970, we've been talking about it. The FAA's plan, when we go back to it--and Irene and Nancy will speak about it again--and again, as Dr. Meecham said, it's a fanning-out process. If you yell loud enough in one corner, they're gonna fan it back over this way. That's not a plan. That's not a plan at all. I'm for safety. I'm for all the good things there are in air travel. I travel a great deal myself. But I do feel that a plan has to be made, that one has to find a direction for this, a solution has to be found.

Experts must not be discredited, nor are the experts the only answer. The reaction to noise is subjective. Sometimes some people may think it's funny. We even had one of the men who came to our meeting, and you may think that it's funny but to him it wasn't--he said that all these night flights interfered with his sex life. We couldn't prove that.

There are people who awaken at night and can't go to sleep again. Not only have the findings of Dr. Meecham been brought up, but as early as 1970 I brought up the research that I have from an Institute in Germany, that brought up many, very many of these same questions of the errect on people's health, of high blood pressure, of heart disease. That was done in Europe. He brought up the fact that there are curfews at night.

We can't--if we suddenly are gonna open this all up to the CAB that every little line that fly, and you can fly anywhere, fly beautifully, fly whatever it may be, what the slogans are, with the yellow nose, the blue nose, the yellow tail--I don't know, we'll do our best for you--that's fine. But there has to be a control that goes beyond this, and what it's impact is on the community. I do suggest that we do try to find,out and sincerely try to find out.

Not to do this is what I have often called the public placebo of people in public agencies handing out to the public the idea that something will be done, when nothing is being done. There's an awful lot of window-dressing.

We are hoping that with Mr. Daugherty coming into West Los Angeles now, with the efforts that are being made for more citizen input, that perhaps something more can be accomplished. And we would like to also see that, because there are certain experts--supposedly, if you might put in quotes, "on the side of the harrassed citizen," that he is to try to be discredited. I hope that among governmental agencies, that will stop.

Airport Noise and the Community

Nancy Markel - Director
Pacific Palisades Property Owners Association Our

More than two years ago, our community experienced a tremendous increase in Jet Aircraft noise. Our association started to receive phone calls and letters from residents of Pacific Palisades and the Santa Monica Canyon. We contacted the Department of Airports at LAX and were told that they would made an inquire - upon checking back with them we were told that there was no change - no change became a standard comment that was given to every organizations in our community as they tried to seek information as to the dause of the problem.

Pacific Palisades is a community approximately ten miles from LAX and is located between Santa Monica and Malibu. Our terrain is variable and is composed of many canyon and hillside residential areas. We have several corridors of aircraft over us each day and at that time several hundred Jet Aircraft were flying in the airspace above our homes. It is a very long story as to how we sought relief from the noise - and a story that is known in many communities throught the United States. We soon learned that local - City and State agencies have nothing to say about what happens to aircraft after it leaves the airport.

We found that there is no agency responsible for regulating, monitoring and correcting noise problems created by Jet Aircraft routing once they are airbound. The only agency assigned to the problem is the Federal Aviation Administration whose primary responsibility it to regulate and promote the Aviation Industry. The obvious CONFIICT OF INTEREST cannot be in the best interest of the residents living under Jet-Aircraft corridors.

Our community joined with representatives of Homeowner and other community organizations in Pacific Palisades, Rustic Canyon, Brentwood, Santa Monica, Malibu and Topanga to form a Federation-THE WEST LOS ANGELES FEDERATION AGAINST JET NOISE. The Federation was formed because we learned that numerous communities were afflicted or had recently been afflicted, with a great increase in Jet Noise. As a Federation we received so many complaints and heard so many stories of people feeling nauseated, nervous and unable to sleep that we became more determined to get relief from the problem. We were told by many residents of our communities that, they as individuals, had called the airport tower, the FAA, or the Department of Airports and time and time agian they had been told that there was no change, and such things as "No one else is complaining",... "Maybe it's because you have your windows open", ... "Maybe it is because it is summer and you are outdorrs more often".

As we were forced to persist we were told by the FAA various reasons why the aircraft could not fly higher as they passed over our residential areas. Safety, National Safety and Fuel Consumption were given as reasons that the FAA was unable to help us.

We have the good fortune of having members of our communities who worked in the aviation industry. They too, were distressed by the increase in noise and recommended changes that could be made in the routing that would not effect safety or any other factor. The process was long. Members of our Federation spent hundreds of hours reading studies and reports, meeting with representatives of other communities as well as city and federal representatives.

We have been told why by many organizations that our work and persistence was admirable - but, the truth of the matter is that we had no choice - we could not turn away from so so many people crying for help.

There simply has to be another way of dealing with the grave problem of Aircraft Noise. We have the deepest sympathy for residents who live adjacent to Los Angeles International Airport and share the fear of the residents living near Santa Monica Airport, that it could be opened up Jet Aircraft.

We have read testimony from transcripts of Congressional Hearings held eight to ten years ago, and we know of the pending bills for retro-fitting aircraft, BUT, it was very clear yesterday, when gentleman from Westchester stated that they had been waiting for relief for twenty years that it will be another ten years before substantial noise relief will be found - and with the continuing proposals for issuing of variances from existing noise standards and the increasing number of aircraft, it may well never be found.

Our suggestion for effectively dealing with the problem is not a new one - but, one that has the potential to succeed. An agency, independent of the Federal Aviation Administration should be assigned the responsibility of solving noise problems related to aircraft while in flight. The agency could be part of the Environmental Protection Agency (EPA) or it could be an Environmental Controller who would monitor aircraft and would supervise for Noise Compliance. Whater the agency - complaints from residents of communities could be directed to them and investigated by them. Noise monitoring and testing in communities would be done by Noise Experts hired by this agency. Funds from this agency could go to Independent Scientiests to thoroughly investigate the Physiological and Psychological effect aircraft noise has on citizens.

We believe that the FAA should no longer be burdened with Noise Complaints - This is too much responsibility and pressure put upon them. The people will no longer be put-off by comments that there have not been enough studies or that no one is sure what Harm Jet Noise does. They want to know WHY the studies were not done? Was it because the industry and the FAA could not deal with the findings?

We wish to thank Professor Meecham and the UCLA School of Engineering and Applied Science for sponsoring this conference and personally thank him and his colleagues who are trying to stimulate meaningful studies and action in the area of Aircraft Noise Abatement.

Airport Noise and the Community

Irene Stern
W. Los Angeles Federation Against Jet Noise
Homeowners Association of Rustic Canyon

I'm here on the behalf of a federation which was specifically founded to combat jet noise. We are composed of numerous homeowners associations and residents, and we are a citizen action group. The area we cover is 10 20 miles of coastal communities north of the airport, and we extend inland as well. We have Committee members from Pacific Pallisades, as you noticed, from Brentwood Coalition, Santa monica, Santa Monica Canyon, Malabu Township, Tapanga, and so on. Also, I represent here my own community known as Rustic Canyon, which is a canyon between Santa Monica and Pacific Pallisades. In all of these residential communities along the ocean, we have a very special topography, and a very low ambient noise. The canyons which surround us have a way of amplifying the sound, which then reverberates many-fold, and the noise of the planes becomes to us an intolerable constant irritant. During the last ten years, there was a continuous effort and work on the part of citizens in the various coastal communities to affect a change in one air pattern; that pattern pertains to the ... These people, heads of large organizations, have in most casesfull, responsible jobs as Mrs. Marco and Mrs. Marx, and were not funded in any way whatsoever to undertake the job and the role that have been forced on us. We have some advice some advice from various communities who have gone through similar battles, and are indebted to Mrs. Marx, to Professor Meecham, and others for their advice and wisdom.

In 1970, Mrs. Marx was instrumental in bringing about Congressional hearings which dealth with the issue of aircraft noise intrusion. We have amassed volumes of correspondence from all the communities along the coastal communities that have been affected by jet noise in the past, and we joined together. We realize that we have all been hearing the same answers from the FAA, notably nothing is changed, when in reality they were shifting the noise from community to community, and the word safety was brought up.

Finally, after two years of calling, writing, appealing to all governmental agencies, the FAA decided to collect some data, and publish a report. It took months. The 110 page report is called the Interim Report; and I have some comments on this report. The people were given 30 days to reply to this report. It contains some data extracted from computer print-outs, and so on. Now, here are some comments of the people on the report, and those people were requested to give their comments. I'll just quote briefly. This man is from Malabu, and he's addressing the letter to Chief of Aircraft Division. "The following is a summary of my observations concerning the FAA report entitled, Evaluation of Revised Departure Procedures From Los Angeles International Airport for Noise Reduction, that was prepared under your supervision. Overall, the report appears to be a pro forma bureaucratic exercise, rather than an analysis which uses hard data to weigh carefully the advantages and disadvantages of all feasible alternatives.

The voluminous data supplied with the report is not used to draw any comparisons or form any conclusions concerning the affect of jet liner routing on the noise on the ground." This letter was addressed to Congressman Barry Goldwater, and it describes the feelings of this man who is a member of the federation, and he's also an Associate Professor of Business and Economics and Finance at UCLA--"Dear Congressman Goldwater: In seeking a remedy to the intolerable noise intrusion through the Western Region of FAA in Los Angeles, we have had repeated contact with many local FAA officials--" And there are several names here being names, which I'll skip.--"our many discussions with these persons led us to conclude that they are not qualified to fulfill their public responsibilities. There is apparent evidence that they are incapable technically, incapable administratively, insincere in understanding the real ..., and insincere in seeking reasonable flight plan alternatives, seemingly because of the relative unattractiveness of such plans to the commercial interests of the carriers. We ask you, through your office, to institute a detailed and impartial investigation into the worthiness of these officials to remain in their present positions.

The reluctance of the local FAA officials to be objective, and to enter into analytic constructive and non-defensive discussions of the flight procedures is at this point hindering all hopes of a solution to the noise problem." He goes on to say that "The data has been repeatedly amended to indicate subjective preponderances, rather than actual figures, or has been found to be incomplete ..." and so on. Uncolored facts, answeers, and analyses have been difficult for us to obtain as adversely-affected and concerned citizens.

No, I want to digress here that we have requested the computer print-out data under the Freedom of Information Act from the FAA, and we have gotten some tapes; however, the logics of those tapes have been withheld. And when I asked about it, the FA* officials told me, we did not want you to have the language to these tapes--bluntly. So we have no use for the information that we could use otherwise.

"Solutions which are reasonable to everyone concerned are available, and we are eager to investigate them. All that is required is some understanding of the problems, a constructive attitude, and systematic and unbiased analysis of alternatives. The local FAA is incapable of this." Now, he signs his name.

Now, here is a letter from a man who is an Aeronautical Engineer and a Computer Systems Specialist, and he's the President of one of the Homeowners Associationswe represent, as well as a member of the federation. "Dear Mr. Happy:"--Mr. Happy is Chief of the Air Traffic Division--"Over the past year, I have communicated with your agency on numerous occasions in regards to jet noise over ... In Mid-July, I received a copy of your Interim Report entitled, Evaluation of Revised Departure Procedures From Los Angeles International Airport for Noise Reduction. I would like to take this opportunity to comment on jet noise in our area in general, and on your report. Frankly, we did not know who was responsible, or how we might communicate with them."--speaking about the beginning of his stuggle-. "I still did not fully comprehend the organization of your agency, or who is responsible for what in regards to noise abatement. I don't mean to imply that the bureaucracy has been organized with the objective of confusing the citizenry, but that has been the result. In this regard, we are appreciate of the efforts of the West Federation Against Jet Noise, which has brought proper focus to our concern.

In regard to your Interim Report, I'm afraid that it does not represent an adequate basis for specification of permanent noise abatement procedures. I submit the following observations for your consideration. The Report appears to consistently overstate the economic and energy impact of the revised procedures by approximately a factor of two." And he goes on to explain, and it is a long paragraph, explaining how he arrives at this. Apparently, the FAA has not taken into coniseration the cruise speed of the aircraft, they have overlooked it, and apparently every plane has to reach a cruise altitude of a certain point, and you have to deduct that from your calculations. "The fuel consumption figures, ..., are totally misleading. I believe you must agree that all aircraft on all flight paths must climb to cruise altitude, and accelerate to cruise speed, and the geographic configuration of the path does not materially affect the amount of fuel consumed.

"Now, the question of noise over Pacific Pallisades and Santa Monica for nighttime arrivals does not appear to have been

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addressed. I believe your office has made a commitment in this regard at the recent meeting with Congressman .. I hope you will be able to present the necessary data measurements, and solutions to the citizens in those areas."

This is a problem which I'll describe later on, and I have a little map drawn here as to how a simple problem is not being solved to the distress and detriment of the people on the ground.

The suggestion of reducing flight frequency to best reduce noise incidents, and compensate for any estra fuel that might be consumed by noise abatement procedures, is still open. Perhaps it is not appropriate to suggest the FAa is the action agency for this item. However, if Caltrans can block off freeway, and EPA can threaten to close parking lots, surely somewhere in the Federal bureaucracy--CAB, DOT, EPA, or whatever--more economical flight scheduling can be initiated.

"Your report indicates on page 54 an estimated 50,663 additional gallons of fuel daily. Without endorsing the accuracy of that number, let me point out that it is less than the amount consumed by a single B747 flight to the East Coast.

We started all of this fight three years ago, and one of the first letters to us was that of a Professor living in Pacific Palisades, and he said something to this effect: For the record, I'm writing to let you know that my family, my neighbors, my friends, and myself find the aircraft noise in our community to be appalling, to put it mildly. About 200 times in 24 hours, day and night, jets departing from Los Angeles Airport follow a flight path over the Pacific Pallisades area. In the process, there are thundering reverberations throughout our normally peaceful canyon. And it is outrageous that nothing has been done to protect the emotionnal and physical health of the citizens who are endangered by this intermittent irritation. As a Professor of Psychology at UCLA, I am readily familiar with the extent of literature indicating numerous health hazards to excessive noise generated by aircraft. You should know that, unless something is done about this problem immediately, many of us will be forced to take appropriate legal action through property owner associations, consumer groups, health care organizations; and it is your responsibility to protect the citizens you serve. Please do something about it. It's addressed to the Office of the Chief Counsel of FAA in Washington.

I would like now to describe briefly the noise problem which we feel, along the coast, that can easily be remedied. This problem has not been addressed by the local FAA Region, in spite of the commitment that was given to the people about a year ago that they would do something about it. And the only reason I'm illustrating it is to show that, In Los Angeles, we have a special advantage. We have an ocean along which many of the communities are situated. And it is--I don't agree with Mr. Dyer, who implied that unless we solve every problem all over the country, you should not solve any problem. I believe that we must utilize the ocean which we are fortunate to have. And here is my letter to Mr. Daugherty, who is present, and it deals with the arrival of aircraft from Filmore which are not using the adjacent ocean, and continue to be a constant irritant in the lives of the residents of Coastal communities. Now, that ... is nominally over the water--on the air traffic charts, it is over the water. But in reality, the management of the local tower control is bringing these aircraft over land. And the visual approach which allows this disturbance to continue must be structured and ... by the FAA in such a way that the descending planes would fly over the ocean consistently. And we cannot impress upon you too strongly the fact that this unnecessary constant irritant must be promptly lifted by your intervention.

Another problem which the people are still having is the so-called over-the-ocean after midnight approach. I have asked Mr. Mann this morning whether it was structured in such a way that the people north of the airport would be awakened by the over-the-ocean approach. I did not get a satisfactory answer. I don't think it was intended that way. I think the planes were to proceed from the east directly over the water, and then make their turns ... Now, what's happening in reality I would like to illustrate. I drew a little map here. These planes--the area showing the planes coming from Honolulu, Seattle, San Francisco--they are all coming from Filmore, and they are descending to air interception, which is somewhere on Malibu. Now, on the air traffic chart, the descent from the intersection to LAX is almost entirely over the water. This is the line that is illustrated on the FAA chart. What's happening in reality that the leg of this arrival is bent in such a way that these planes are coming consistently over land. And it's a very small distance between land and ocean here, but enough that if they cared, the ... intersection could be moved slightly towards the ocean to allow all of these arrivals to stay over the ocean until LAX.

The other procedure which wakes people up at night is the after-midnight landings. They're coming from the east after midnight, and they're coming towards the ocean; and on paper, they're supposed to make their turns at the airport. What's happening is that the local management of the tower control is turning these planes up here to delay them in a holding pattern. That happens in the middle of the night many times. They turn them around and around, because there's no place to land apparently, and it's called delayed vectoring. In this case again, it is quite easy to remedy by letting those aircraft go just past to the shoreline, and start their turns entirely over the ocean. There is enough room here, according to our experts which the federation has. So, this is one small aspect of what can be done without very long-range planning.

Now, we are very hopeful that, under the direction of Mr. Daugherty, there will be some action soon. I feel that it is good that he graciously spent two days to hear the various views; but the federation is going to continue even when all immediate problems are solved, and we're going to continue briefing various groups about our struggle. We have published a response to the FAA report of many pages, with conclusions and summary. And there is even a book contemplated on our experiences in the last three years. And I would like to end my presentation with this.

W.C. Meecham: I want to say a word about the structure of this meeting. Here we have representatives of citizens groups, who don't deal with the technology, but they have human concerns. What really counts is what's happening to the people from whom we are now hearing.

Do I come and speak here? is Dr. Nazir. They have accused me of discovoring automatic boundary layer control, way back in England, London University, in 1934 35. And I have done aerodynamic designs since, all of my life. I know what I would be talking about. I have either the misfortune or good fortune of just moved into Inglewood, three miles from the airport. And I haven't slept (properly) for two and a half months now. I noticed this tremendous reverberation expanding into a chain reaction of volcanic explosions. I think that this happens for one reason. This is in the engine run-up area.

US: Right. Have the people done anything about a constructive solution for this? I would to ask all three of you ladies that so wonderfully described all this thing. And I would like to thank you and everybody here to come in search of a solution.

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Gertrude Marks: Well, I'll just say something about the west side of Los Angeles... I think there is a fairer solution. The jet noise problem is the responsibility of the people of the FAA, the people in our cities, the government. Why hasn't something been done politically to help those poor people that are sitting under the approach flight path ... I'm interested in that. I'm interested in the fight for my neighbors. But there is no spokesman for the poor people under the approach to the airport. Now, that has to be cleared up. Is there somebody from the airport from the FAA, or anybody who can tell me what is going to be done for the people on the south end of town; on the east part of town that's under that flight pattern? And I don't want to hear the old song of the airport was here before they moved in. Maybe they didn't know, but they have a right to a peaceful life. Now I wanted to add one thing that I forgot when I went to a recent FAA meeting. A gentleman was present who contended with me because I'm from Brentwood. And if anybody wants my credentials for air interest in a humanistic approach, ... I'd be happy to give them.

Litigation: The Way, the What, the Results
Jerrold Fadem
Attorney-At-Law

It's a pleasure to be here with you today, and take part in a program with some of the eminently qualified people who have spoken with you already. I must confess to a bit of nostalgia. The last time I was in this room was 32 years ago, and I was taking a course in Educational Psychology. And as I sat here, I was thinking how--what I learned back 32 years ago. It's going to get fed back in some small part now.

The problem of airport noise--and when I use that, consider it a shorthand for all the noxious by-products of aircraft: the fumes, the fall-out of the unburned burned ..., and the vibrations--rather than say noise, fumes, soot, and vibrations, I'll just say noise, and hope you'll remember that I mean, most of the time at least, all of those things.

The problem of airport noise began, in serious degree, to be noticed legally in World War II. And the first case of any consequence to come to the Court was one that eventually reached the United States Supreme Court, and is still the controlling case, and that's the Causby case, Causby v. the United States. Mr. Causby owned a chicken farm which was at the end of an Air Force--I guess in those days an Air Corps--runway. And his chickens were emotionally disturbed by the aircraft noise, and took to fighting among themselves and pecking one another, sometimes even to death. And he sued for the emotional disturbance of his chickens, and was successful. And while that sets the basic legal precedent, that still controls in the United States Supreme Court, it sadly heralded one of the other noxious by-products of aircraft noise. That is that the perpetrators of it have unlimited financial resources, and they overlitigate every case to the absolute maximum of their financial resources. It's a very unfair struggle of the perpetrator of these disturbances fighting the injured with the money that comes from the injured and his neighbors. But that first case, with its pickyune $2,000 damages, got carried to the United States Supreme Court, and that tactic continues right down to today.

The next major litigational landmark, and the one that again still controls, again in keeping with airport proprietor pattern, was carried to the ultimate judicial tribunal of the United States Supreme Court as well. And that was the case of Gregg v. Alagheni County. Alagheni County is the County in which Pittsburgh is located, and the airport in this case was County-owned, serving Pittsburgh and its metropolitan area. In that case, there was before the

LCD: Which one of the charges?

US: The charge that the FAA will adopt whatever position is needed to enhance the airport position.

LCL: I don't disagree with Jerrald on his comments about what appears to be different. His colleagues within our agency see these three cases as specifically different ones. I am not well enough versed in the legalities of it to fully understand the intricacies of the differences, but I know that our legal people see these as three distinctly different situations. It comes back to what we've said repeatedly, that each airport, each situation is different, and must be evaluated on its own. The letter back to Senator Cranston--yes, I did sign it. I think the answer to the Senator in the specific case on San Diego is an honest answer, based on the legal opinions of the lawyers in the Western Region coordinated with the lawyers in Washington. I also agree with him that we're coming to a point where a change of some kind I think is needed. My charter from Congress--and while I work for you, the people, I do it through Congress--and my basic charters from Congress are first safety, second promotion of aviation, and way down in the priorities is noise abatement. And I think it was either Mrs. Marx or Mrs. Marco who said I've got a conflict of interest. I have. And I don't see a way out of it, except to try and weigh each one to the best of my ability. And that's not an easy job.

United States Supreme Court every potentially-liable entity: The County as proprietor was sued, the airlines serving the airport were sued, and the United States through its function via the FAA of regulation of aircraft in flight was sued. And the issue of this Gregg case was amongst all these people who theoretically could be liable for operation of a civil airport--Remember, the Causby case twenty years earlier had been the United States as the defendant because the proprietor of the airport, the owner of the aircraft, and the controller of the air space were all the United States, They didn't have the problem of choosing who was liable there because the United States was doin' all the bad things--But in the Aligheni County case, the Griggs case, there were the familiar divisions of function of airport use.

The United States Supreme Court decided, by vote of six to three, that given those choice of defendants, that the reasonable place to put the financial burden was on the airport proprietor. And their reasoning was that it was the airport proprietor who selected where to put the airport, who put the direction on the runways, who brought--by providing a facility--brought the airplanes to the airport and to its neighborhood. The decision to put this responsibility on the airport proprietor told wise airports that they then had the responsibility of creating a method of charging for their use of the airport, which would socialize the cost of the noise damage. Sadly, most airports did not take the lead from that case, but some did, and put into their leases that if there were need to acquire additional buffer zones, if there were damage awards for noise from aircraft in flight, that it would be apportioned among the users of the airport who, in turn, had the opportunity to pass the cost on to those who were benefiting from the use of the airport--passengers, freight forwarders, shippers, whoever was using the airport facility. But that idea, as I say, was adopted at first only by a few, and I would say today from my limited exposure that it's still not the prevailing pattern of airport leasing.

But in my opinion, any airport that has not instituted that kind of a system is courting financial ruin. That, as a method, makes sense. I don't say it's the only rational method, but it is one that can work. And it is not widely understood that it is the users of the airport who do pick up the tab for the cost of noise damage awards. And if they are being picked up by the airport without being passed on to the users, the airports have no one to blame but themselves, because in the fifteen years or so since the Greggs case was decided, they've had ample notice that the liability rested upon the airport proprietor.

The problem of airport noise arose in California as early as anywhere else. And the California Supreme Court has spoken to the problem three times in a very direct way. The first case is the Loma Portal case that came out of the San Diego Airport, known to some of you as Linberg Field. And--spelled with an H, that's an in joke.

There was a public meeting down there this week, the fliers of which announced that it was going to be about Linbergh Field, and somebody dropped the H. And I'm told that the airport hand-carried six packets of material to all the media in San Diego, one of the main complaints of which was that Linbergh had lost its H.--but aside from such momentous matters, the Loma Portal case stood for the rule that the only legal remedy available to neighbors of the airport was the collection of damages. The Court would not--and I repeat not--interfere with the way that the airport was operated. I think it's a dumb rule. I think it's a cop-out; but it is the rule, and it means that the only kind of legal redress that's available is probably the poorest kind of approach to solving the noise problem, suing for money. I tell clients before they hire me, when they hire me, and after their cases are over, this is the wrong way to approach the problem; because whether the case is won or if the case is lost, if the client gets money or doesn't get money, the problem is still there. If you award the homeowners vast sums of money, you've done nothing to solve the problem. The next day, the airplanes are just as frequent, just as noisy. And I consider the Court's limiting of neighbor redress to monetary damages a very unfortunate decision.

The next case on the subject that was of any great importance was a case of laws called Nessle v. Santa Monica. That established a rule that you could recover, not only for emotional disturbance of chickens, but emotional disturbance of people. And that was treated by the City Attorney of Los Angeles, who was not in the law suit though he intervened as ..., caused him to come forth with statements of alarm that made eight-column Banner headlines that LA International Airport was going to have to shut down. That might or might not be a good idea, but it hardly was a measured or reasoned response to the decision. The importance of Nessle was that it gave and recognized that there was an entitlement to relief for the real problem, the way that noise disturbs people. And further, that these people could sue and resue each year. They could sort of keep coming back to the well. And the prospect of these kinds of massive damages against airports offered an indirect--and I don't like it because it's indirect--but at least it was a method, finally, to bring home to airports that they had to begin paying some heed to people other than those who they considered their constituency, the airlines, and the pilots, and the fixed-based operators. That they had to have some awareness that they were part of a community, and to give some respect to the rights of neighbors. And we--and I'll get into more detail later--have enjoyed some considerable success in the use of the Nessle tool.

The last California Supreme Court case on the subject was the City of San Jose case. It really only did one thing. It said that you cannot bring a class action for airport noise except under rather unusual circumstances which we've been able to meet in one case, but for practical purposes there's no class action; that each individual that feels they're damaged has to bring a law suit on their own behalf. You can bring together a thousand or two thousand people in one law suit, but each one of them has to individually employ an attorney. They can't do it through the vehicle of the class action. But in the course of deciding that the class action in the San Jose case was ill-taken, the Court reiterated that there was liability for emotional disturbance of people, and that is the last word of the California Supreme on the subject and it was just some three or four years ago.

However, California's judicial system, as you can tell from some of my comments--and you didn't need my comments to tell you in any event--is run by humans, and thereby is infected with some frailties. And the frailties are showing up with the growth of California to a State with which, what I guess is approaching 22 million people now, and with a great geographic spread, incredible amounts of commerce I read a statistic just this week that only seven nations in the world produce more products per annum than California by itself. So we are really, for all practical purposes, a nation in size.

And our Court system was designed many years ago when this was a much sleepier and less busy place. And we have the State of California divided into Districts for intermediate appelate court purposes, and these little duchies, like the Chinese war lords with the Emperor a long way in Peking, like to assert their own authority, and have recently done so just a year ago in a case called Brit v. San Diego Port District. And that is a decision of the Fifth District Court of Appeal in San Diego. And in it, the Court voiced what I would call the herecy that the FAA has intended to and has so occupied the field of regulation of aircraft that the Loma Portal case, the Nessle case, the San Jose case, and the Griggs case had all been overruled by the FAA Administrator. There was no longer a liability by the airport proprietor for emotional disturbance of the neighbors of the airport. Implicitly, that said since someone has to be responsible, if it had indeed been as the Brit Court case said, it would then be the FAA. That, I think, is apparent nonsense, but we'll soon put it to the test because we'll sue the FAA, not with any expectation of beating them, but to get a definitive decision out of the Federal Court that the San Diego Court of Appeal is wrong.

The question should occur to you, and probably has, why didn't we appeal that to the California Supreme Court. Well, we did, but aside from the inherent litigational uncertainties, our timing was exquisitely bad. Our petition--and we have no choice as to our timing, there are strict time limits expressed in terms of days in which you can petition the California Supreme Court for permission to have your case heard. No one has the right to have their case heard by the California Supreme Court with two exceptions. Only public utility companies dissatisfied with their rates, and those condemned to death, have a right to appeal to the California Supreme Court. All the other cases have only the privilege of knocking on its door and saying, "will you agree to hear our case?" Not, "will you decide it our way," but "will you agree to hear it."

So within that little window of days which we had to appeal to the California Supreme Court for permission to come in their door, we were--it was a year ago come December--the California Supreme Court was in one of its most massive transitions in the quarter-of-a-century that I've been a lawyer. It was down to four members. Chief Justice Wright had retired; Justice Sullivan had retired; and their replacements had not yet been confirmed by the Judicial Qualifications Committee. And Justice McComb had been suspended by the Judicial Qualifications Commission because of his senility.

And so our petition for hearing by the Supreme Court arrived when it consisted of four instead of seven members, and you need four votes. We got two of the four, and we were left with this nasty problem that is very much at large at the moment. We do have pending today--and the decision should be forthcoming late Wednesday, unless the Court decides to enlarge its time to decide this case, it does have that power if it chooses to, but probably they'll decide Wednesday afternoon. You will learn about it if it happens, because it'll certainly get a lot of press. We have pending an extraordinary petition to ask the Court to deal with this problem now, because there are so many of these cases pending in California, and if they all are left to be tried according to the incorrect Brit Rule, it'll be grievous squandering of rather limited judicial resources. I cannot in candor tell you that I am enthusiastic about the chances of them taking it, because the Court is incredibly overloaded. It--only those who follow it's work closely can appreciate just how overworked they are. And the granting of extraordinary risks is a rarity. I don't think in civil cases that they grant more than five a year. But the shot has been taken, and we'll soon know what it may or may not have hit.

So that's the, what I'll call the precedential, the legal precedents that govern airport litigation. And so far as direct actions regarding the noise, well, there are some other things that have risen in more recent itmes which have been inadequately exploited by airport neighbors; namely, for lack of economic resources. And these are two in number.

One is the use of the necessity of Environmental Impact Reports or Environmental Impact Statements. For those of you who aren't entirely familiar, if there are any here who aren't, they're called reports if they're done under the California law. They're called statements if they're done under the Federal law, and I'll use them interchangeably. Environmental Impact statements are required before FAA grants are given to airports. I would suppose from recent news accounts that most of you have become aware of what's been going on for a number of years; that every time you buy an airline ticket, 8% of it is a tax which goes into a fund called ADAP, the Airport Development Aid Program fund. And that fund is the source of providing the money for airports to expand their physical facilities. And it is another method--and perhaps I should have mentioned it earlier--of socializing the cost of airport damage cases because, where there have been damage awards, the airports are able to tap that fund, the ADAP fund, for reimbursement for what they pay out. And so the wide-spread believed misconception that these awards fall on the shoulders of the proprietor is untrue, for the reason that ADAP grants as well as lease provision with the users where the airports have been prudent enough to utilize those lease provisions. The FAA, for reasons that would have made Screwge happy but I can't think of any other reason that's valid--has not used this money to a large extent. It's surplus has now risen to two billion dollars. And when LAX wanted reimbursement for its noise awards, they refused to pay, and LAX had to sue them and did eventually win a 9.6 million dollar reimbursement from that fund for the amounts paid to purchase property and pay damage awards. That 8% tax is now undergoing a raid by the airlines, who know a bundle of bootie when they see it, and having the need to buy new aircraft because present-generation aircraft are wearing out, have found a way to make you, the users of the airlines, pay for it.

And under the leadership of two California Congressmen, the House of Representatives, just within the month, passed out a bill permit diversion of--I think it's 4%, but check me on the percentage--out of that 8%--half of it, is what I'm saying--2% is it? Thank you for the correction--2% out of the 8% to go in grants to airlines, so that they could fly quieter aircraft. The--to me, I want quieter aircraft, but it seems to me an inappropriate way to achieve the funds. The airlines are profit-making enterprises. I fail to see the wisdom of permitting them to go into a trust fund, which is what this is, for their--to meet their needs. And whether it'll pass the Senate will depend, in part, upon what you people tell to your Senators, because as it happens our California Senior Senator is a pivotal figure in relation to the future of this litigation--or this legislation--in the Senate. I've discussed this with his aides, and I think that his decision is not yet made, and is subject to being influenced by what you say to him. If you disagree with me, say it; if you agree with me, say it. But I do urge you to say it.

In any event, to get these ADAP moneys, it is necessary to prepare an Environmental Impact Statement. And I have yet to see an Environmental Impact Statement that was what I would call honest, much less competent, for an airport. The persons who create seem to suffer congenitally from the idea that they want to play down and minimize the impact of the airport. And that makes them subject to legal attack, because the one thing that's required of an EIS is that it tell it all, that it be a full disclosure document. And the promulgators of these EIS's, and the people, the airports that pay for them, are doing themselves a disservice by trying to play down the impact of the noise. The smart way to do an Environmental Impact Statement is to tell it like it is, and then your EIS is free from attack.

An EIS that describes a bad situation doesn't prevent your getting your grant. It does, in fact, mean you're more likely to get it than if you fudge on the facts. So that is a new litigational avenue that has opened up in recent years, and which we have used in a couple of instances where we've had the economic resources, but not nearly as frequently as it deserves to be used. But again, we come back to the incredible cost of these cases resulting from two--no, three--sources. One, the understanding of these issue requires a real staff of experts, who have to be paid. Two, the defendants, the airports, have unlimited funds, and they overlitigate in the same pattern that I described early in my remarks. And finally, lawyers, too, have to get paid on the other side. And the combination of these three factors has made these kind of law suits much less frequent than I would think appropriate.

Variances are required by California law to only be permitted when there are appropriate conditions attached to them to assure that the airport is trying to bring itself into compliance. And the California Department of Aeronautics that administers this Act has done its best to nullify it, by bureaucratic repeal, by never attaching to any permit that I'm aware of, conditions that would require the progress that the statute says is to accompany any variance. And I think that this opens another litigational opportunity that does permit a nearly direct blow at what really is the problem here--needless injurious methods of operating an airport. Without this technique, you're delegated to the indirect one of making it so expensive for the airport, in terms of their own litigational costs and in terms of the awards they have to pay, and in terms of the political restlessness of the natives, that they eventually begin to pay some heed. The lid has been rather successfully kept on by the proprietors for the most part, but as with all such successes when there is a legitimate complaint, the pressure builds until it finally explodes, and there is revolution rather than evolution. And if we fail to change the rule enunciated by the Fifth District Court of Appeals in the Brit case, and people are left with no remedy because the Federal Court has never recognized the suit against the FAA (which is the only place you can sue the FAA), and the State Court won't recognize the case now against the airport proprietor, and the airlines were let off the hook long ago in Griggs--the people will find another way. They'll find their own Proposition 13 with which to solve this problem. And we'll see how that goes.

Now, I have a few more stones to throw at the FAA which, I gather from what I've heard from my associate who attended yesterday got his deserved share, and likewise from what I've heard today. My complaint, so far as I know, has not been voiced to this body. And that is that the FAA plays games with the Court. Depending upon the circumstances, it tells the Court and the population and the legislators totally different things.

For example, in the Concord case, at Kennedy--and I have the quotes from the FAA briefs before me but I'll paraphrase them rather than reading them, and if anybody wants to see them, they're welcome to come up afterwards and I'll show them the exact words. In the Concord case, you'll recall that Kennedy, through its proprietor, the Port authority of New York, said that it wanted to create rules governing the admission of SST's to Kennedy. But it never did issue such a rule, equivocated because it had its own internal political struggle on the thing. And British Airways and Air France sued the Port Authority of New York for permission to land there, and the Port Authority immobilized saying we want to create a rule, but we haven't been able to do it yet. Said no, you can't come in until we create a rule. And the FAA intervened in that case as ..., and told the Court what I believe to be the correct rule; that it is the prerogative of the airport proprietor to exclude any class of aircraft that it wishes. But, said the FAA, the Port Authority has not done so, has not created a rule to exclude, and therefore they must permit in the Concord. In other words, using the correct rule, the FAA came down on the side of the airlines.

In the Santa Monica case, which is now pending, and which the City of Santa Monica, depending on that rule (and it's got all kinds of formal FAA documents to support it), banned all jet aircraft at that postage stamp airport. And the airport operator has sued Santa Monica saying that an airport proprietor has no right to keep out a class of aircraft. And the FAA intervened in the Santa Monica case, and has told that Judge and that Court that the local proprietor does not have the authority to ban any class of aircraft. And while the brief barely had the ink dry that had been filed in the Santa Monica case, the FAA, on August 30 of this year (just three weeks ago), wrote to Senator Cranston a three page letter, of which I'm going to read but one sentence. This letter happened to relate to the San Diego Court District, so you'll understand the context--Well, I'd better read two sentences, the question that was put by the Senator to the FAA, and the answer: "Question No. 5D Who decides which planes are quiet enough to land during curfew hours? How can we get this level re-evaluated?" (According to Webster, quiet is making no disturbance or trouble.)" That was the Senator's question.

The answer, from the FAA: "An airport proprietor--in this case, the Unified Port District--has the responsibility of determining the noise levels acceptable at its airports.)" I think this is reprehensible. I think it is malsuited. I think it is a scandal which will eventually come to public attention. And it is this adoption of whatever posture will enhance the airlines and the users of aircraft that is the FAA's reflex reaction to any problem. They will take whatever side seems that it will promote those whom the FAA sees as its constituency--the airlines, the aircraft manufacturers--to the detriment of the general population. That, I think, is a scandal which will eventually end up with embarrassment for them. But they, with the proprietors--you heard Eisenhower speak of the Military, the industrial complex--we have our equivalent in our field; it's the FAA, airport proprietor, airline, airplane manufacturer complex. And they're thwarting--successfully, up to this point--the will of the people, but I do retain enough faith in the vitality of our institutions that if we can get rid of a President, we can reform the FAA. Do you want me to keep this a minute? You want questions?

US: I'd like to get a response to your charges from Mr. Dougherty of the FAA.

J.F.: Fine. He signed the letter I read.

GENERAL QUESTIONS

Joe Archuci, Torrance. My question will be directed to Mr. Daugherty. And that question also relates to the FAA. I'm looking at the copy of a speech made by Dr. Foster, who is the Director of the Office of Environmental Quality within the FAA. And in that speech on March 14, 1978, addressed to the manufacturer--and we were talking about today, he said--and I could almost verbatim read in the brief that the Federal government filed in the Santa Monica case. And it said, and I quote only the element that I'm interested in at this point, it said: "To the airport proprietor, I would say that any action, not just the imposition of a curfew, must"--underlined--"be controlled or suppressed to the extent that it conflicts with the FAA's responsibility to ensure the quality of air safety and the integrity of transportation through navigable air space, or conflicts with the availability of airport access to all users without unjust discrimination or undue burden on interstate commerce. And further, he says, "Which will be my question directed to you: What do you think about it?" he said. "At the airports where Federal funding has been used to subsidize improvements, the Airport Development Aid Program assurances have restated this qualification each time a grant has been signed. Now, a lot of the airports go for the grants, like Torrance going up to get the Federal moneys ... They don't know what they're getting into ... They lose, I think, control in the future. Now, would you like to comment, your interpretation, what is meant by this?

LCD: I have not been aware of the speech you quote, and it is, to me, sad that the Head of the Environmental Agency of the FAA sees it from the standpoint that you quoted. He doesn't sound like he's there to protect the environment. It's another example of putting a fox to guard the chicken coop. As to his quotation from the ADAP grant agreement, he may elsewhere make note of the fact that those grant agreements contain statutorily--required language; that if they accept that grant, that that airport is going to take all steps it can to protect neighboring communities, and we have litigated that case, and have had it established in the case of the City of Inglewood v. the City of Los Angeles, where we represented the City of Inglewood. That that contract between the airport proprietor and the FAA makes all persons in the neighboring communities third party beneficiaries, entitled to sue for the airport's breeching the contract when they don't take all feasible steps to protect the neighbors. But Inglewood, after starting that case, cut off the money, and after we had established the principal but before the case went ..., we lost it, and we appealed, and we won on appeal establishing the principal. We were sent back to the U.S. District Court to try to enforce the contract, and at that point Inglewood cut off our money, and the law suit died. BUt it is an established vehicle now by which another provision of that grant agreement, directly at odds with the one you read, does offer potentially another avenue of redress for neighbors.

U.S.: Inaudible question.

J.F.: Oh, I'm sorry, I didn't make myself clear. The Griggs v. Aligheni case, which is a statement of the U.S. Supreme Court, says the airport proprietor is liable. And the San Diego Court of Appeal, as I say, way down there in the corner of the United States, declared its independence. They're as far as you can get from the seat of the Central government, and so far there's been no counterinvasion. Yes, down in back.

US: I would like to know what you think of the City Attorney's decision. The City Attorney is supposed to represent the people of Los Angeles. But in effect the City Attorney is actually an Attorney for the Los Angeles Airport. Now would you say that there is a conflict of interest ther?

J.F: Oh, without a doubt. And we have that case under submission in the Second District Court of Appeal -- that's Los Angeles. And you'll get a decision on that within 30 days, because that Court has absolute limits on when it must decide cases. And that decision, I know, is less than 30 days away. And I-- while it's only one of several issues in the case, the Courts do have the ability to not answer questions they don't choose to answer. But we have directly raised the conflict to which you addressed yourself.

US: I have been told, at one meeting that I have attended--I do not yet have the copy in my hand--that there has been a brief from the FAA making an appeal to control local airport...

JF: No, I would doubt that. If it happened, I'm not aware of it, and I would doubt that that would be the FAA. I am not aware of it. I would doubt that it is true. The FAA doesn't want to take on the burden of paying all these damage judgments, and that's what they're courting when they play these games with the Courts. We have enough collections of quotes from the FAA to prove anything. And they're going to end up holding that liability bag for this game-playing.

US: Question concerning charges.

Well, the ADAP fund is set up to pay certain charges incurred by local airports. One of them is acquisition of right to fly aircraft over land, or to acquire land that is needed for the airport. So they're eligible, as I recall, for 80% reimbursment, or something like that, and that's how it comes about. Yes, sir.

Louis Leader, Monterey Peninsula Herald: Do you oppose the Anderson Bill solely because you know where the money is coming from to retrofit, or re-engine, or buy new planes? Or do you oppose--would you still oppose it if the money was coming from someplace else? In other words, do you see it as an effective means of solving the noise problem?

JF: Well, that's several questions. I'll try to remember and answer them all. No, I oppose the Anderson Bill for more reasons than the source of funds. I oppose it because I don't think it's good public policy for money taken from you and me when you flew down here, or when I flew back from San Diego yesterday--to take that money which we paid into a trust fund to be used for airport facilities, to take it and make a gift of it to private, profit-making organizations who are making more money this year than they have in the last ten, and who, under the kind of economic system of free enterprise that I happen to value and to feel has kept this country in whatever health it now enjoys, I don't think that giving an aid program to highly profitable airlines is good public policy. You asked a final question at the end.

LL: If there was another source of the funds, do you think just the noise aspect of the bill, do you think that will solve the noise problem?

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JR: No, it will not solve the noise problem; it will help a lot. The so-called Part 36 qualified aircraft are, generally speaking, (and this varies), half as loud as the non-Part 36 aircraft. And you've got the--if you were to make all aircraft qualify under Part 36, you'd do--take a big step forward, but it would not solve the problem. It would only reduce it. Yes sir?

LL: Could you tell us the name of that City Attorney ...?

JR: I don't remember it, and this is embarrassing since I tried the case. But you've now found out something about lawyers. They're in there trying the cases, and they don't always know who their client is. The--I'll tell ya, if you'll call my office, even if you walk out of here, and ask for my partner, Mike Berger, and the phone number is 451-9951--Mike Berger--and tell him it's the case that's under submission in Division 5 of the second District, in which we raised the conflict of interest; he'll give you the name instantly, because his memory's better than mine, he's not as old as I am. Yes?

Jim Hoyt, Santa Monica. Jerry, I seldom like to be wrong, but I would just assume you'd tell me I'm wrong on this question. You talk about the Anderson Bill. My recollection of that is one of the things I find so objectionable to it is it limits the ability of property owners to sue the airport. Is that correct?

JF: I am not able to answer that authoritatively. As originally introduced, it did contain a provision that severly limited that ability to sue the airports. And it's--you know--blatantly unconstitutional; but that'll mean another five years of fighting, and misallocation of resources to litigational battles when attention could better be focused on solving the problem. Yes sir?

Mack McKenny, I'm one of the bureaucrats with the State Department of Transportation; I head the Division of Aeronautics. I don't want to get into a debate here; however, I do want to go on record stating that the Department of Transportation is thoroughly familiar, and has followed and has intervened in the three cases--the Federal Court cases you mentioned--the Port of New York, and the Port of San Diego, and Santa Monica. And we do not see any inconsistency in the part of FAA in those cases. Mr. Dougherty's position, as he said, is correct. They are different. And if you look beyond the first line in there you'll find out that their position is consistent, and we agree with their position in all three cases. I have several other items I would like to discuss, but I can't think of them right now. But I think it is reprehensible that a person of your knowledge, Mr. Fadem, would stand there and, through half truths, lend to the confusion and the lengthening of solving this overall noise problem.

JF: Well, you're opinion as to my conduct is of interest, but it won't deter me for calling things as they are. And indeed, you deserve the introduction you gave yourself.

US: Who do you represent?

JF: I represent a vast variety of property owners from coast to coast, from border to border. I don't know if that's what you mean to ask.

US: Well, not exactly.

JF: I've represented many municipalities, counties, school districts--

US: I mean, in the specific instance of our talk here now. You're against the FAA, you're against the airport operators, you're against the aircraft. I thought you were for the anti-noise people, but you've been against them also ... you don't support the anti-noise bill. Well, you must be for someone, that's what I want to know.

JF: Well, I take it that you're, in your own way, expressing your agreement with the previous speaker, which is your privilege.

Nancy Markel: This is not directed to you, Mr. Fadem, but it is directed to Mr. Dyre, and it encompasses the question that Jim Hoyt asked earlier regarding individual airports, and how they are supposed to be considered separately. I think the FAA representatives touched on that, also.

First, I think we heard here today that they are considered separately because each airport has separate problems and difficulties. But then when Jim Hoyt asked that there be a special type of monitoring of noise because of the limit on aircraft at night, and more of an averaging in, he was told, well we could not--at least, this is the way I recall it--you could not make a special circumstance for that particular airport. But aside from that, I wanted to read, so that it would be on the recording, because we have asked for this information before--it's just a little note I'm directing to your agency, Mr. Dyer.

I want to say we wish to formally request that your agency, the State Department of Aeronautics, notify our Federation as to the time and place of your hearings on the variance renewal for LAX. We would also like a complete comp of the conditions and details under which the variance was issued. We would appreciate this information as soon as possible, as your talk today indicated the hearings are to be held soon. We also ask that you publish notice in the Santa Monica Evening Outlook, as well as the Los Angeles Times, now and whenever you hold hearings on LAX. Thank you. The reason

I mentioned those newspapers is because it may have been published in the LA Times in prior times, but now that the people on the West side have been bothered by noise, we would like to be included in hearings; we would like notification so that if people from our area would like to attend, they can.

US: Question about land use.

JF: Each airport is different from other airports as far as the characteristics of the aircraft which operate from it, the land uses around it, and things of that nature. The noise standards, however, establish basic categories. There are three of those categories, and they are standard for any airport in that particular category. Maybe that's what I was answering, but that didn't come out clearly. Does that speak to your question?

US: Question about flight regulations.

LCD: Well, we just have not gone to that extent. The regulation was designed to speak to an average day, which doesn't take into account either the highs or the lows, but rather an average condition. And I wanted to also tell Nancy Marcel that we will, indeed, notify you of the hearing. I believe it has already been published in the newspapers, but we can certainly notify you personally.

US: Question about hearings.

LCD: There are two hearings. One is in San Jose, and the other is in Los Angeles Center here at Los Angeles; and they are back-to-back, one each week. And I'd forgotten; they begin in mid-October, and I think the San Jose hearing is first. So it would be about October 20.

Dr. Nazer. I am not going to say anything too much here. First of all, I would like to thank each and every one of you here, Dr. Meecham and all of you wonderful people who have made this possible, so we can share this very important problem. And I'm sure there's a way to solve it which would satisfy all the parties. And I do think that I have a practical solution, which I'm not going to mention now, but I'm making arrangements with a UCLA professor so we can discuss this thing, and come up with something very satisfactory to both sides. Thank you very much.

Chuck Nay, the Torrance Airport; I'm the Noise Abatement Specialist there. It's been very enjoyable--I guess everybody could get up and say how enjoyable it is--I just hope. I happened to read through a bunch of notes I had, and I tied one string together. Of course, at Torrance, we don't have jets, and I'm thankful. I don't have the problem that LAX has. And in looking at the approach to it, and then listening to the Federation from the Pallisades with their approach and the way they're following this--I've been following their case also--I just hope that, because of your study, Dr. Meecham, about the deaths caused by noise, that the moving of the flight pattern out over the ocean won't cause an EIR because of killing the endangered species in the water. But I really have a question--I've seen stranger things happen!--I have a question for Dr. Lane. In fact, I have two questions. In your monitoring of helicopter noise, have you always used the A scale?

S.R. Lane: No. I think more objective data should be reported for all kinds of noise ... In addition to reporting on the A weighted scale, you might also report it on the C scale, and at night we might also report ...

CN: Did you use the slow or fast scale on most of your helicopter measurements of the scale?

SRL: I don't remember, but I've used those scales--I've used both modes of measurement flowing back to various times. And in the reports we've written on the subject we always say which mode of measurement will be used.

CN: Okay. The reason I bring this up is because at Torrance we also have a helicopter problem--I noticed everybody's eyes lit up when Dr. Ling was talking about helicopters. And we have the same problem at Torrance. It's the inherent nature of the helicopter, and also of the helicopter pilot. Our vender, who's building our permit noise minotor, has informed us to go with an additional C scale monitoring for perhaps helicopter noise. We're buying an entirely new parallel system again another quarter of a million dollars. We have a problem because the helicopters that we have that fly over fall well within the range of other aircraft noise at Torrance, and yet all you have to do is stand in the back yard of somebody's residence and you realize there's something very different about that noise. And if you or anyone else have any data, any input you could give us, it's gonna be trememdously helpful, because we can't just ban helicopters, not unless they change their minds about the way you look at ... discriminations.

CN: What about aerodynamics on this noise of helicopters? The helicopters seem to fly at 62% more, in all a tremendous drag area. And I think that ... to completely minimize the drag ...

SRL: I have studied helicopter aerodynamics, and I don't even want to talk about it any more. I do want to just make one brief statement about helicopters. It's a concern all over the LA Basin. We saw the charts about how helicopter usage has increased. It's going to continue to increase. If all the pilots in the world, the very worst offenders, the very--the ones who have the least amount of regard for anybody, is the helicopter pilot. I've been a helicopter pilot for fifteen years. And because of the flexibility and capability the helicopter offers, it is so natural to do things which irritate others.

CN: We have attacked the airplane noise problem at Torrance, and now we are ready to attack the helicopter noise problem. We're going to do this in the same way: It's through education. In working with air traffic control, we are going to specify altitudes and flight plans--these are recommended, of course--which will get the helicopter off of the 300' altitude that he works at. We have a problem. We have no jurisdiction over County, State, Federal, or military helicopters. We have found in our approach with airplanes that the only method we can use is to back them into a corner and promise to ruin them publicly with bad words if they don't comply. And that has been sufficient; these people have a very sensitive nature to adverse publicity. We're to use this very same campaign in helicopters.

We have started with the California Highway Patrol, and we've gotten quite a bit of good results about it. As I say, we're having trouble trying to measure, to determine what helicopter noises are good and which ones are not good. We're more than happy to share information with anyone, work with anyone, and if we can be of any help in solving the helicopter problem, let us know.
As far as the technological--as this gentleman mentioned, I've had the pleasure of flying the Hughes 500P (Papa) model. It was the prototype. It was funded by the Department of Defense, a six million dollar helicopter. It's absolutely quiet. It was used in Southeast Asia at various times. I flew it for a couple of years. The technology is there. But again, as we've stressed throughout, there is no demand upon the manufacturer to produce a quiet helicopter because people are still buying noisy helicopters. So with Torrance, and if all the other areas, come up with reasonable--and I say reasonable--noise limits, which we have done, and based on that noise limit if we're allowed to keep those helicopters--not all, but those--out of our airport, and all the other cities and airports do the same, than the manufacturer will have to make a quieter helicopter. This is the approach that we're taking, and it's working for us so far, and we certainly ask all of you to join in. Thank you for the time.

W.C. Meecham: I think one point here, is being missed. One of the purposes, fairly widely recognized, of the police helicopter is the very noise that you're talking about. An important part of their activities is the intimidation offered by the noise.

US: If I might, I'll make one other brief statement. For the last many years before coming to California, I worked with the Army's Wright Research Laboratory, and we were primarily concerned with night vision, night visionics for helicopters. There are systems on the shelf now, the U.S. Forest Service in California is already using a couple of these, which allow you to fly at 1,000 1500' with your lights off, and with a fairly quiet helicopter. And with the type of system they have, they can see on the ground much better than they can at night, low down, with the bright lights, which is frightening. Now,civil force is one thing, yes. But I don't think that the civil force to catch a car thief, a store thief, quite equates to waking up 500 people during the night. I think there are better ways to catch the car thief than to wake everyone up. The system's already there, the technology is there. There are other agencies using it. It's a matter of saying listen, it's time to make a change.

SRL: My comment relates to a theme that I detect in the discussion today that hasn't really been treated, an issue that hasn't been treated well enough. That is, setting or determining what is a reasonable noise limit. It's not clear to me that enough people were involved in setting the California noise standards. It's not clear to me that 65 CNEL is a reasonable noise limit. I think there should be--I hope there is further discussion and debate, and citizen input to the problem or issue of what is a reasonable noise limit. When Mr. Dyre talked this morning, the thing that struck me was he said, bring the contour down to this line, and you have zero impact. Well, that's a lot of BS. You have plenty of noise impact left, even if you do bring the 65 CNEL line down to the airport boundaries.

The other comment that I want to say to you is that--and this is self-serving, but I feel compelled to say it, anyway--you asked me for data, okay? Professor Meecham and myself have done quite a bit of unfunded work over the past few years. No public agency has paid us for what we've done. We've encouraged the ridicule and the wrath of not only our compatriots, our coworkers on the acoustical field, but officials in government agencies. And we just don't have the funds to supply data to everyone that asks us for it.

US: We want to commend you both for what you have done. Now, there are very few of you working in our academic communities ... that are willing to step forward and take ... And I think that it is incumbent upon the community to realize that they have a responsibility that goes beyond their job. ... But there are too many people who are always ... to protect their jobs, and I think this goes beyond that. And I certainly want to thank you both, and thank Dr. Meecham for this meeting, and to thank every other person who has been of help to us to try to improve the quality of life in this area.

US: This is for Mr. Dyer--does the California Noise Standards Act give too much power to the County Board of Supervisors? Can an insensitive Board fail to see a noise problem existing within its own County? And can problem airports still be designated, or has the time period on that passed?

R.D.: Does it give too much power? We were directed by the Legislature to give as much power as possible to the local County Board of Supervisors.

US: If the State will not help to fund those things, and the County government says ... we can't get the money, we don't have the money to do that, you know ... ... business of evaluating these kinds of systems for years there. And yet, you know, you guys can sit up there and talk, but goddammit, if you don't give any money to anybody, you don't get anything done!

R.D.: Well, I don't know how the rules which followed the adoption of our noise standards are--apply to that. But I can recall one of them that--I believe that I've been told that if we were now to pass the noise standards, we would be required to give moneys for those things. But at the time--

US: That's right. ... you have to go to Court and fight for it.

RD: Well, at the time, we were impressed by the fact that if there is indeed a problem, the public will let it's legisla--correction, it's local elected officials know about that problem, and they will decide in favor of whatever action is necessary to declare it a problem.

US: Yes, that's awful nice! That just sounds so nice!

RD: Well, the alternative to that would be to have Big Brother, the State, come down and tell you how to rule your own nests. That's very unpopular.

US: Mr. Dyer out of this conversation about Santa Monica and their problems with curfew, and related to the possibility of the State establishing hourly levels, reminded me we just recently did an EIS, and the responses from our school District said applying the State noise standard to current aircraft produces a footprint that hardly extends beyond the airport boundaries, and excludes all schools. However, the State standards are so low that they accepted prob--they recognized noise problems that our schools are ignored. An hourly standard would probably have made things tolerable to our school District. I think that might have solved Santa Monica's problems, too, rather than make 'em average over 24 hours. Since you can't use your single event by the Court rulings, perhaps you should look into that very closely.
RD: Point noted. Thank you.

US: We have been so hard-working today looking for a solution to the noise problem. This group is not over here, so I'll read a few of them they recommend.

It was coming from the Aircraft Owners and Pilots Association, and they reported in January, 1976 on their recommendations how to solve the problem of noise. I'll just read a short ... It appears in the flier on the Public Relations DIPS for Airports. One of them says: "Pilots can be effective speaking to local civic groups about the benefits of airports, but endorsements by local businessmen and professionals might be even more effective. Try persuading a local banker to speak on the bank's use of general aviation aircraft to speed the delivery of checks. That will solve the noise problem. Or a car or equipment dealer could tell how the shipment of parts by air prevents delays in repairs. Or an ... could reveal how his pilots fly the mail. A lot of non-aviation businesses depend on aviation. Enlist their aid in the airport campaign."

And the other recommendation is: "Why not try for some local involvement by inviting the community Garden Club to help in making the airport grounds more beautiful for the City. This shows an interest in community beautification, gains a personal involvement by people not normally associated with the airport, and might wind up getting a much better-looking airport."

So, that's one of the groups' recommendation how to solve the problem of noise. But this is just to represent the group which is not here. The other thing, to change the subject, we were looking also in terms of solution to the problem for a knight on a white charger to take charge of those diverse groups. And some of you have a copy of my merry-go-round chart.

My question is for Mr. Procunier, and it's like this: Why the EPA can't take charge and become an integrating force, a lobbyist of sorts, to bring all the groups together, and to keep the ball rolling until acceptable solutions are found? ... Would you please answer?

RP: I'll do the best I can. Like everyone that works for the government, we have guidance from Congress on what we can and what we can't do. And the Noise Control Act of 1972 gave us very definite limitations. We do have some authority in coordinating research, and in giving out public information. And I think we have--at least, we've attempted here--to give out public information. We attempted to have training and workshops, both to other government levels--and I think there are people here from the State that can testify that we have done that. This isn't the first workshop that we've had. Aside from that, we're not in the business, and it's not appropriate for government to be lobbying for its own resources. So we can't go out and say, you know, citizen group here and citizen group there, you should be doing this and you should be going over to see someone else. We do, in fact, if we become aware of certain information, and someone calls into our office--and it's not my office, I'm in the Noise program, there are separate offices that deal with public affairs--and we do make them aware of other things. But I am very impressed by the quality of the people in the audience, and the level of understanding of the problem, which I think is fairly unique. And if that's any reflection on the Regional Noise Program, than I'm proud to be part of it.

US: Since we don't have answers, I guess, I have a question which relates the EPA with FAA. And I talked with Mr. Procunier, and he thinks that Mr. Daugherty probably can answer it. Now, the EPA, they did some work and do research, and they recommend noise abatement techniques and procedures. Now, about--in '76, they spent taxpayers money and did a study, and published a twelve-page report of recommendations to the FAA. Now, it was submitted, and it called for an airport noise regulatory process. It was submitted to the FAA in November, '76. It has twelve pages of small print, and it was published in the Federal Register. And I read over and over again, and I liked it what they said. In fact, they had some of the recommendations that the City of Torrance tried to do. But they never show up in the print any other place. There are 17 recommendations that are very good. And I don't know if I can read them, but the question is: What happened to that recommendation from the FAA--no, from the EPA to the FAA in two years. And I have tried to call both agencies, and they don't know what's happened. Now, that was a good methodology for noise abatement, all kind of things, and recommendations, including curfews, and landing fields based on performance specifications of aircraft and so on, that to my liking, they help to reduce noise. Seventeen of them! Could you please try to answer, Mr. Daugherty perhaps, why nothing happened?

L.C. Daugherty: I'll try to give you as direct an answer as possible. As Mr. Procunier stated, they are limited by the Noise Act in what they can do. And in aviation noise specifically, Congress mandated that EPA could only provide recommendations and guidance. Those are then taken by the FAA and compared with all of the other factors, and I cannot tell you specifically. I would recommend you contact our Office of Environmental

Quality in Washington, Chuck Foster, if you want answers on the specific recommendation. That comes into an agency policy, which is not the prerogatives of the Region. And I don't mean to by-pass the question. It's just outside of my jurisdiction, except that many of the recommendations--EPA has a specific responsibility for environment, improving the environment. And as was pointed out earlier, we have a responsibility for that, as well as promoting aviation and many other things. And those recommendations get tied up in the whole ball game of it.

R. Procunier: I would like to answer the gentleman who asked about EPA, who asked the previous question. I have in my hand two reports to Congress, which have been sent to me by the General Accounting Office. One is called, "Noise Pollution, Federal Program to Control It Has Been Slow And Ineffective... Environmental Protection Agency, Department of Transportation." And further on, it says: "Although some gains have been made since passage of the first comprehensive legislation to control noise, the Noise Control Act of 1972, implementing many of its provisions has been slow and sometimes ineffective. The Congress should hold hearings on the effectiveness thus far of the Federal program, which was established to control and lessen noise pollution. The two major agencies involved agree that hearings are appropriate and timely." The other one is called, "Effective Fuel Conservation Programs Could Save Millions of Gallons of Aviation Fuel." I can give anybody who wants the numbers of those publications; and it is my understanding that the Environmental Protection Agency can only advise; EPA cannot enforce aviation noise control measures. So, in that case, they cannot be effective.

US: Mr. Fadem made a comment about variances not requiring something. And I think that you should hear the exact phraseology from the noise standard: It says: "The Department may grant a variance if the public interest would be satisfied by such a variance. In weighing the public interest, the Department's considerations include, but are not limited to, the following:" And it goes through economic and technologic feasibility, noise impact, etc. In fact, each of the variances which the Department has granted has had six or eight, or some number approximately in that area, of conditions which are the programs which are determined to be reasonable at that particular airport application. And I think that you should know that, because Mr. Fadem's charges lead you to believe otherwise.

Irene Wright, from Ontario, CA: the only person hear from Ontario citizens. I wish I could take back to the citizens the feeling that there is some concern about the noise which I have gotten here, because we feel no concern out there. Everyone wants to send all the planes from LAX over to us. But the take-home lesson I think I'm getting is that we citizens groups from the different airports must stick together, and go forward on some projects, to take noise abatement out of the hands of the FAA, which definitely has it on a very low priority, and try to put it in the hands of the EPA, if they'll take it. We need an advocate. The same thing goes really for the State. Noise abatement is certainly not in the hands of the Division of Aeronautics. Mr. Dyer has just told us his concern with the public, which they feel, is the whole traveling public, which is much more numerous than the people who are impacted. So we really need to have, within the State also, someone who cares about noise abatement. And maybe that's just up to us citizens to figure out how to do that.

George Heap from the Greater Westchester Homeowners Association : I think this would be a good time to state specifically that, under the cruel circumstances of the weather and this room, I think everybody here is to be congratulated for keeping their cool, as well as their head. And I personally think that, those of us who are still here--we have a few absentees now--should thank the sponsors of the meeting for conducting it in the way you have, in a way fair to everybody, and trying to assimilate and collect some data which, when we go out of here, won't solve the noise problem. At least it shows that we have made an effort to solve it. And thank you very much on my part, and I think on behalf of everybody else for your sponsorship of the meeting. Thank you.

NOISE AND THE COMMUNITY
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